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DRAWING INDEX

 PROJECT SITE →

APPROVAL DOES NOT RELIEVE A/E OF DESIGN LIABILITY

VICINITY MAP

A detailed site map of the University of Illinois at Chicago campus. The map shows various buildings, streets, and landmarks. A circle highlights the 'PROJECT SITE' located near the 'Library' and 'Student Union'. A north arrow is in the bottom left corner.

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BASIS OF DESIGN

1. BUILDING CODE	2003 IBC
2. BUILDING CLASSIFICATION CATEGORY	II
3. GRAVITY DESIGN:	
DEAD LOADS	
Roofs	20 psf
SNOW LOADS	
Snow load on flat roof, Pf	33 psf
Importance factor: Is	1.0
Exposure factor: Ce	1.0
Thermal factor: Ct	1.1
4. WIND DESIGN:	
Basic wind speed	90 mph
Importance factor: I	1.0
Exposure: C	
Components and cladding	17.6 psf
5. SEISMIC DESIGN:	
Analysis procedure: EQUIVALENT LATERAL FORCE	
Importance factor: Ie	1.0
Spectral response accelerations: Ss & S1	1.41 & 0.55
Site class: D	
Spectral response coefficients: SDS & SD1	0.94 & 0.55
Seismic Design Category	D
Basic Seismic-Force-Resisting System:	
Bearing walls special reinforced masonry walls	1.0
Response modification factor: R	5
Seismic response coefficient: Cs	0.134
6. SOILS:	
Soil bearing pressure (Assumed)	1500 psf
Lateral earth pressure	45 psf
Minimum frost cover	30 inches
7. ABBREVIATIONS:	
EOR = Engineer of record. See professional stamp this page.	
UNO = Unless noted otherwise	
(E) = Existing condition	
(N) = New construction	

GENERAL

- THE GENERAL CONTRACTOR SHALL:
 - Be familiar with the contract documents and insure that subcontractors are familiar with their portion of the work. Submit a written request to the Arch/EOR for approval before proceeding with any changes.
 - Verifies site conditions and dimensions at the site. If they differ from the contract documents, notify the Arch/EOR prior to fabrication/construction of affected elements. Existing condition information on the drawings is based on best knowledge acquired during the design phase and may differ from actual conditions. Affected details may require redesign.
 - Report to the Arch/EOR modifications made to the structure.
 - Be responsible for safety and protection on and around the job site and adjacent properties.
- THE GENERAL CONTRACTOR SHALL COORDINATE:
 - And verify locations, weights and sizes of mechanical units, equipment, etc. prior to the fabrication and erecting of structural supporting elements. Report sizes and locations that differ from those shown on the drawings to the Arch/EOR for review. Additional framing maybe required.
 - Roof, floor, and wall openings required for mechanical, etc. which are not shown on the structural drawings with the Arch/EOR.
 - Any structural situation not covered by the drawings with the Arch/EOR.
 - Doors, windows, walls, elevations, slopes, stairs, curbs, drains, recesses, depressions, railings, waterproofing, finishes, chamfers, kerfs, pads, landscape walls, trenches in slabs, etc. with the structural wall.
 - Inspections, testing, and structural observations as work proceeds. Notify the EOR 48 hours prior to any required structural observations.
- CONTRACT DOCUMENTS & DRAWINGS:
 - These structural notes complement the specifications and the drawings.
 - Specific details, sections and notes shown on the drawings govern over these general notes and typical details.
 - Contract documents take precedence over shop drawings, UNO.
 - Apply typical or similar details, sections and notes to similar situations on the drawings where specific details are not referenced.
 - Drawings and details have been prepared to visually represent information provided in scaled form. However, DO NOT scale plans or details for dimensional information.
 - Refer to architectural drawings for dimensions.
- BUILDING CODE COMPLIANCE: Construction, inspection, materials, testing, and workmanship shall conform to the requirements of the governing building code.
- CONSTRUCTION SEQUENCE, SHORING, AND BRACING REQUIREMENTS: The general contractor is responsible for the method, means, and sequence of structural erection, UNO. He shall provide adequate temporary shoring or bracing for all structural elements until the entire structural system is completed. Design of shoring and bracing is by others at no additional cost to the owner.
- OMISSIONS, CONFLICTS & DISCREPANCIES:
 - Bring omissions, conflicts or discrepancies between the elements of the contract documents to the attention of the Arch/EOR before proceeding with work involved.
 - In case of conflicts or discrepancies, follow the most stringent requirements as directed by the Arch/EOR.
- MISCELLANEOUS:
 - During and after construction, builder and/owner shall keep loads on the structure within the limits of this design. See Basis of Design.
 - Site observations by ES2's field representative shall neither be construed as inspection nor approval of construction..
- SUBMITTALS:
 - Make submittals in a timely manner. ES2's review is for general compliance only and is not intended as approval. Contractor is responsible for verifying sizes, dimensions and elevations on submittals as related to the contract documents.
 - Submit the following items for review prior to proceeding with the work:
 - Concrete material Certifications & mix designs.
 - Masonry material Certifications, grout & mortar designs.
 - Shop Drawings: Reinforcing steel
 - Steel deck
 - Structural steel
 - Special loads on the structure.
 - Roof, floor and wall openings not shown on the drawings.
 - Welding procedures and certifications.
 - Veneer ties and anchors.
 - Allow two weeks for the review of submittals by the EOR.
 - Have EOR approved shop drawings & materials on site before construction of those components begin.
 - Substitutions are not allowed unless approved by the EOR. Submit requests for structural substitutions to the Arch/EOR.

SPECIAL INSPECTION AND TESTING

- INSPECTIONS: Provide special inspection by an independent agency in accordance with IBC Chapter 17 and as outlined below:

Anchor bolts and concrete & masonry embedments.

Concrete: during pours, rebar placement, and taking of test specimens. Inspectors shall be ACI-II or ICC certified.

Masonry: during placement, grouting, reinforcing, and taking of test specimens. Inspectors shall be ICC certified.

Reinforcing steel: in concrete and masonry.

Soils: bearing materials and placement of structural fill.

Steel Deck: (periodic)

Steel to steel bolting: all high strength bolts.

Welding: all field welds. Inspector shall be AWS-QC1 certified.
- TESTING: The owner will provide testing by qualified testing personnel for the following types of construction:

Bolting: installation and correct torque and/or tension.

Concrete: strength, slump, air, and temperature.

Masonry: strength of mortar, grout, block, and prisms.

Soils: compaction.

Welding: type, size, length, and quality of shop and all field welds by approved methods.
- THE CONTRACTOR SHALL:
 - Coordinate testing. DO NOT proceed with subsequent work until inspections and testing has been approved.
 - Copy inspection reports/testing results to the Arch/EOR and owner before work proceeds.
 - Correct deficient work at no additional cost to the owner.

CONCRETE

- CODES AND STANDARDS: Comply with the following Codes:
 - ACI 301, "Specifications for Structural Concrete for Buildings".
 - ACI 318, "Building Code Requirements for Reinforced Concrete".
 - ACI 347, "Recommended Practice for Concrete Form Work".
- MATERIALS shall conform to the following:
 - Cement; ASTM C150, Type I, Portland Cement.
 - Hard rock aggregates: ASTM C33
 - Lightweight aggregates: ASTM C330
 - Water shall be potable.
 - Air entrainment: ASTM C260
 - Fly ash: ASTM C618
 - Calcium chloride SHALL NOT be used.
- MIX DESIGNS:
 - Place only one type of concrete at any given time.
 - The maximum slump shall be 4" w/o plasticizer added.
 - Use pea gravel and/or plasticizer in congested areas.
 - Limit fly ash to 20% of the total cement.
 - Concrete mixes shall conform to the following:

TYPE OF CONCRETE MEMBER	28 DAY STRENGTH (psi)	MAX. W/C	MAX. DRY WEIGHT (pcf)	MAX. AGGREGATE SIZE (inches)	AIR (%)
Slabs on grade:	Interior 4000	0.47	150	1.5"	6 ±1
 - *Well-graded Aggregates required (1.5">= course >3/8", medium, and fines <#8) Follow ACI 302 for sand gradation.
- CONSTRUCTION:
 - Mechanically vibrate concrete during placement.
 - Prior to placing concrete, check with trades to insure proper placement of openings, block outs, sleeves, curbs, conduits, bolts, inserts, embeds, dowels, etc. Place anchor bolts and dowels prior to casting concrete, UNO.
 - Add additional reinforcing too sides of floor and wall opening, equivalent to the bars cut by the opening with half to each side of the opening or (2) #5 bars, whichever is greater, UNO. Bars parallel to the principal reinforcing shall run full length of the span. End bars in the other direction with a standard hook. Add (2) #5 x 5'-0" diagonal bars at every corner.
- SLABS ON GRADE (SOG):
 - Minimum slab on grade requirements:
 - 6 inches thickness.
 - 6 inch layer of free-draining gravel base.
 - #4 bars at 18" o.c. both ways, UNO. Chair rebar for proper placement.
 - See Architectural for exterior slabs on grade, UNO.

REINFORCING STEEL

- CODES AND STANDARDS: Comply with:
 - CRSI "Manual of Standard Practice".
 - ACI "Detailing Manual", ACI 315 (or SP-66).
- MATERIALS:
 - New stock deformed rebar: ASTM A615, Grade 60, except as noted.
 - Field bent dowels: ASTM A615, Grade 40 or ASTM A706, Grade 60, Low-Alloy Steel. Reduce spacing of grade 40 dowels by 1/3.
 - Welded rebar: ASTM A706, Grade 60, Low-Alloy Steel.
 - Masonry joint wire: ASTM A82.
- CONSTRUCTION:
 - Detail, bolster, and support all rebar. Tie bars securely with proper clearances before casting concrete.
 - Use rebar free of loose flaky rust, scale, grease, oil, dirt, and other materials, which affect or impair bond.
 - Place rebar continuous in walls, beams, columns, slabs, footings, etc.
 - Minimum lap splices (Inches): (Minimum lap 24")

	#3	#4	#5	#6	#7	#8	#9	#10	#11
Concrete:	24"	24"	24"	33"	53"	66"	80"	96"	113"

Masonry: See schedule 'Masonry - Minimum Bar Lap Lengths table'.
 - Make cold bends. DO NOT use heat. Bends in the fabricator's shop, UNO. DO NOT unbend or rebend a previously bent bar.
 - Minimum concrete cover: (securely position and anchor rebar prior to pour)

Cast against and permanently exposed to earth ..	3"
Exposed to earth or weather:	
#6 and larger	2"
#5 and smaller	1-1/2"
NOT exposed to earth or weather:	
Slabs, walls and joist, #11 & smaller	3/4"
Slabs-On-Grade (SOG)	Center of slab, UNO
 - In masonry, place and position rebar according to the structural drawings while laying units. Secure against displacement at intervals not to exceed the following:

#4 and smaller	6'-0"
#5 and larger	10'-0"
 - DO NOT weld reinforcing unless specifically noted. Use E-90XX electrodes and ASTM A706 reinforcing. Comply with AWS requirements.
 - Use epoxy coated reinforcing when specifically noted. Increase lap splice lengths by a factor of 1.2.

STEEL DECK

- PRODUCT:
 - See plans for deck size and gauge, etc.
 - Manufacture deck and accessories from cold rolled steel conforming to ASTM A-446 Grade A (galvanized G-60) and conform to the Steel Deck Institute and AISC Standards.
- CONSTRUCTION:
 - Install deck with a minimum of 4 spans, UNO. Where such layout is impossible, decking must meet design criteria for simple span condition.
 - Provide 2" minimum deck bearing and 4" lap at splice locations. Provide structural support (angles, etc.) around the perimeter of all deck openings.
 - DO NOT bend or mar deck.
 - Store decking off the ground with one end elevated. Cover with waterproof material and ventilate to avoid condensation.
- DECK WELDING REQUIREMENTS:
 - See plans for welding pattern.
 - Weld to framing members with E60XX or E70XX electrodes.
 - Use 3/4" diameter puddle welds. Penetrate all deck layers with weld metal and have proper fusion to the supporting steel.
 - Crimp side seams before welding side laps or use Verco's Punchlok system w/ connections @ 12" o.c. max. Engage all layers of the deck material.
 - Overlap end laps at least 2" directly over a single steel support. Place welds 1" from the edge of the deck or more.
 - Welds 3/8" x 1.5" long may replace 3/4" diameter welds.

MASONRY - MINIMUM BAR LAP LENGTHS									
Fm = 1500psi		BAR SIZE							
		#2	#4	#5	#6	#7	#8	#9	
BAR COVER	2"	24"	31"	48"	98"	133"	186"	235"	
	2 1/2"	24"	26"	39"	78"	106"	149"	186"	
	3"	24"	24"	32"	65"	89"	124"	157"	
	3 1/2"	24"	24"	28"	56"	76"	106"	134"	
	4"	24"	24"	24"	49"	66"	93"	118"	

1. THESE LAPS ARE REQUIRED IN ALL COLUMNS, WALLS AND BEAMS. LAP LENGTHS DO NOT APPLY TO HOOKS OR COLUMN TIES.

2. THE BAR COVER DISTANCE, K, SHALL BE TAKEN AS THE LEAST DIMENSION AS SHOWN HERE.

3. FOR BAR COVER DISTANCES, K, NOT SHOWN CONTACT E.O.R.

4. MINIMUM YIELD STRENGTH OF REINFORCEMENT: fy = 60,000psi.

5. MECHANICALLY SPLICED BARS GREATER THAN 18".

6. *NOT ALLOWED AS VERT. REINF. IN LOW LIFT GROUTED WALLS.

MASONRY

- CODES AND STANDARDS: Comply with ACI 530, "Building Code Requirements for Masonry Structures".
- MATERIALS:
 - Lightweight concrete masonry units. ASTM C90, Grade N, Type 1. Minimum compressive strength = 1900 psi at 28 days (for all areas).
 - Type "S" Portland cement-lime mortar. Minimum compressive strength = 1800 psi at 28 days. No additives.
 - Grout shall conform to ASTM C476 with a minimum compressive strength of 2000 psi at 28 days. Use a fluid consistent grout, which may contain additional pea gravel if grout spaces are 4" or more in every direction. Limit fly ash to 20% of the total cement.
 - Minimum compressive strength of masonry prism tests at 28 days: f'm = 1500 psi.
- CONSTRUCTION:
 - Store masonry under cover at the job site.
 - Fully bed face shells.
 - Tool Mortar joints concave.
 - DO NOT use mortar for grout.
 - DO NOT use any frozen materials.
 - Use either low or high lift grouting procedures.
 - Consolidate grout by mechanical vibration during placing and reconsolidated after excess moisture has been absorbed but before workability is lost (45 minutes max.).
 - Grout solid cells containing rebar, bolts, anchors, etc.
 - Grout steel joist and steel beam pockets solid, UNO.
 - Provide 1" of grout around bolts in side shells.
 - DO NOT allow penetration through any beam, column, pier, or jamb without the EOR's approval. Otherwise, re-route penetrations at those locations.
 - Prior to placing masonry, check with trades to insure proper placement of openings, block outs, sleeves, conduits, bolts, inserts, embeds, dowels, etc.
- WALLS:
 - Use running bond. Build corners and intersections as an integral unit.
 - Dowel vertical reinforcing to the structure below and above with the same size bar and spacing, UNO.
 - Place vertical reinforcing at the centerline of the wall unless each face (E.F.) is specified, UNO.
 - Provide vertical reinforcing in grouted cells at corners and intersections.
 - Terminate horizontal reinforcing at wall ends or openings with standard hooks or corner type bars. Provide corner bars of the same size bar and spacing as the horizontal reinforcing at corners and intersections.
 - Make horizontal bars continuous where concrete walls, columns, or pilasters interfaces. Provide a key between the masonry and concrete. Grout key solid.
 - Construct bond beams at the top course and at floor and roof diaphragm interfaces.
 - Construct penetrations thru walls as they are being laid. Add 2-#5 bars in grouted cells on all sides of opening which exceed 24 inches in either direction, UNO. Extend vertical edge bars the full height of the wall between floor or roof support. Extend horizontal edge bars 24 inches beyond the opening edges.
 - DO NOT place construction or expansion joints in beams, headers, columns or supports, UNO.
 - Reinforce masonry walls as follows, UNO.

WALL THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING
8"	1-#6 at 48" o.c.	2-#4 at 48" o.c.

U.N.O.

Add ladder-type joint reinforcing of (2) 3/16 wires (1/3) 3/16 wires with veneer) at 16" o.c. horizontally in all masonry walls. See plans, schedules, and details for other reinforcing.

See plans, schedules, and details for other reinforcing.

BEAMS:

- Build beams as an integral part of their supports. No tootching or doweeling is permitted. Provide masonry units with one opened end (back-to-back end shells). Grout beams solid the full depth as shown in the masonry beam schedule.
- Reinforcing in the masonry beam schedule is in addition to standard wall reinforcing.
- Place horizontal top bars in the top 4 inches of the beam and extend 72 bar diameters beyond the edge of the opening or terminate with a hook. Splice bars at mid-spans, UNO.
- Place horizontal bottom bars in the bottom 4 inches of the beam and extend 24 inches beyond the edge of the opening or terminate with a hook. Splice bars at supports, UNO.
- Hook vertical stirrups around bottom horizontal bars. Also hook them around the top horizontal bars or extend them into the wall above the beam a minimum of 48 bar diameters. Grout solid.
- Use the following masonry beam sizes in non-bearing masonry walls, UNO:

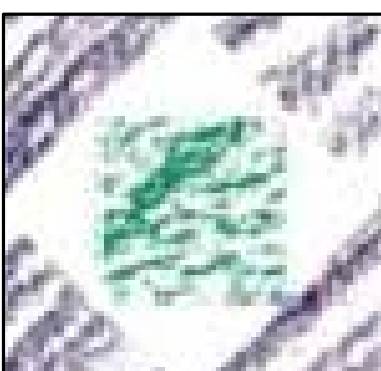
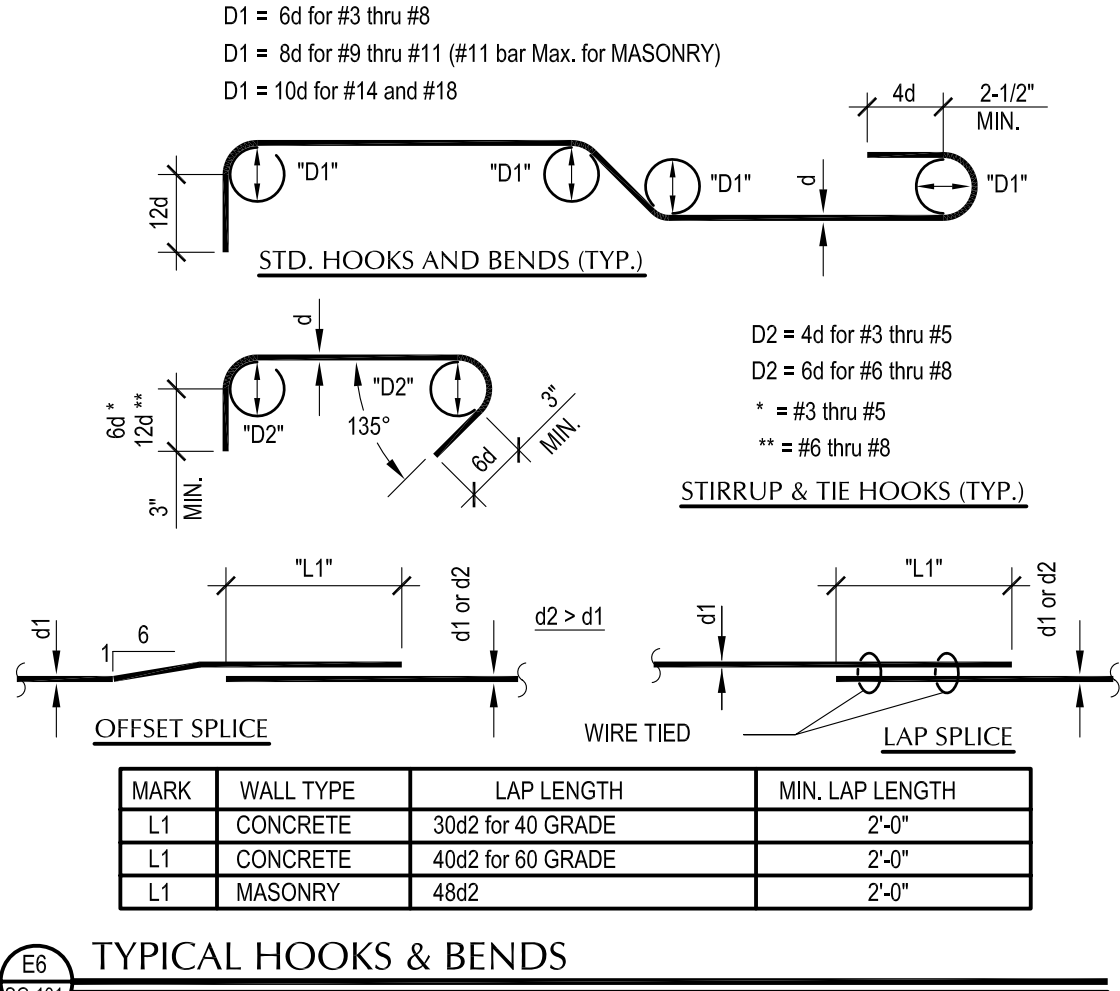
OPENING WIDTH	BEAM WIDTH	BEAM DEPTH	HORIZ. REINF.
Up to 4'-0"	match wall	16"	(2) #5 BOT.
Up to 8'-0"	match wall	24"	(2) #5 T & B
Up to 10'-0"	match wall	32"	(2) #5 T & B

For wider openings consult with the EOR.

- COLUMNS: Grout wall jambs (sides of openings) piers & columns solid the full height of member (floor to floor, etc.). Reinforce wall jambs with 2-#5 vertical bars for each grouted cell (one cell for each 4'-0" of span or portion thereof) with a #5 placed at each side face of the wall jamb, UNO.

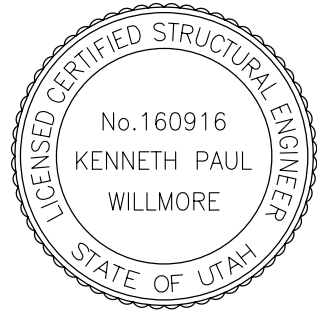
STRUCTURAL STEEL

- CODES AND STANDARDS: Comply with:
 - AISC "Specification for Structural Steel Buildings & Commentary".
 - AISC "Code of Standard Practice" excluding sections 7.5.4, and 7.11.5.
 - AWS "Structural Welding Code", exclude items conflicting with AISC.
- MATERIALS SHALL CONFORM AS FOLLOWS:
 - Wide Flange beams: ASTM A992 Fy = 50 ksi.
 - Other shapes & plates: ASTM A572 Fy = 36 ksi.
 - High strength bolts: ASTM A325.
 - Other bolts: ASTM A307 or better.
 - Welded anchors (studs) and deformed bar anchors (DBA's): manufacturer's specifications. DO NOT substitute reinforcing for DBA's.
- CONSTRUCTION:
 - Fabricate in an approved fabricator's shop.
 - Fabricate beams with incidental camber up, UNO.
- BOLTED CONNECTIONS:
 - Use 3/4" diameter bolts in Std. holes (bolt diameter + 1/16"), UNO.
 - Steel-to-steel connections: Use ASTM A325 type "N" connections, UNO.
 - Other connections: Use ASTM A307 bolts or better except for anchor rods, UNO.
 - Use hardened washers beneath the turned element of the bolt or nut. Use beveled hardened washers where the outer face of bolted parts has a slope greater than one in twenty with respect to the plane normal to the bolts axis. At oversized holes, use hardened washers or plates at least 5/16" thick conforming to ASTM F436.
 - Tighten bolts until all plies of the joint are in firm contact. Snug tight condition, UNO.
 - Enlarge bolt holes by reaming. DO NOT torch cut.
- WELDED CONNECTIONS:
 - Perform welding and cutting by AWS certified welders in accordance with ANSI/AWS D1.1 (latest edition).
 - For typical shop & field welds, use filler metals with nominal 70 ksi tensile strength having:
 - Matching material for multiple pass welds.
 - A diffusible hydrogen limit of H16 or less.
 - A CVN toughness of 20 Ft-lbs at 0 deg. F.
 - Use pre-qualified procedures.
 - Weld intersecting steel shapes together, which are not connected with bolts, with all-around fillet welds, UNO.
 - Weld studs and DBA's according to Manufacturer's specs.
 - Whenever possible use shop welds. The contractor shall coordinate field and shop welds between shop fabrication and the steel erector.
 - Remove slag from welds.



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ISSUE: CONSTRUCTION DOCS
DATE: 30 NOVEMBER 2005

DFCM PROJECT NO: 05238660

PROJECT NO: 20050650

DRAWN BY: NT

CHECKED BY: KW

DESIGNED BY: KW

RECORD DRAWING DATE:

SIGNATURE:

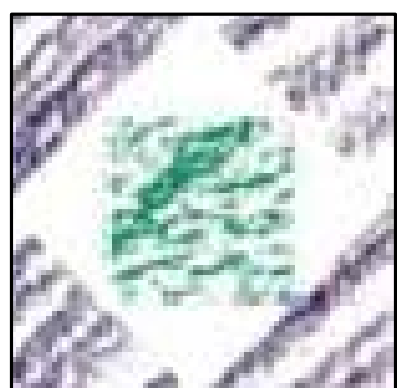
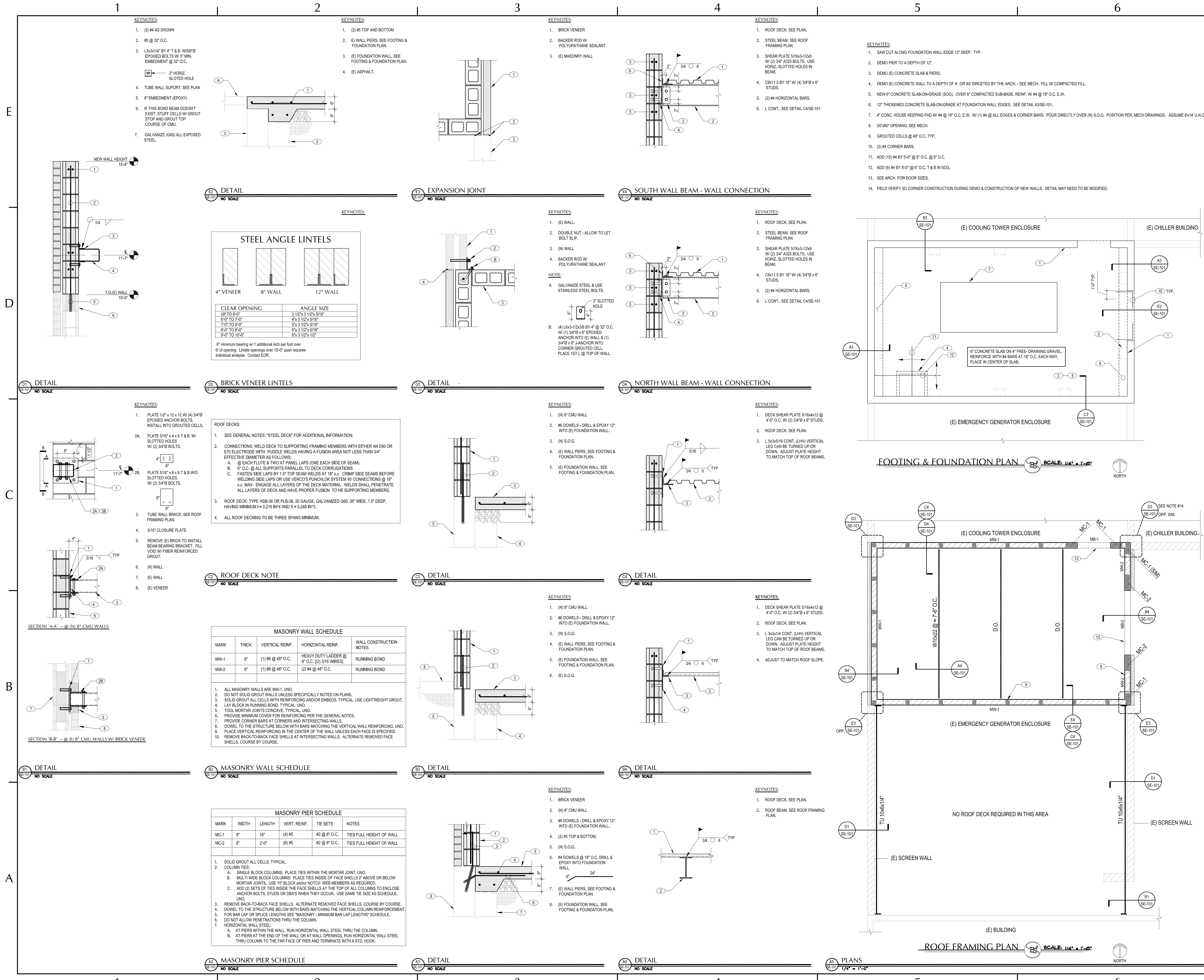
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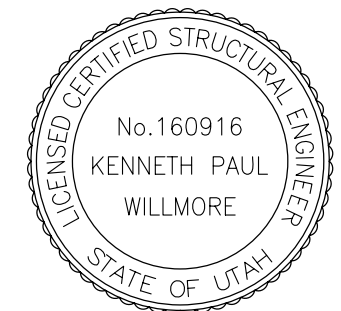
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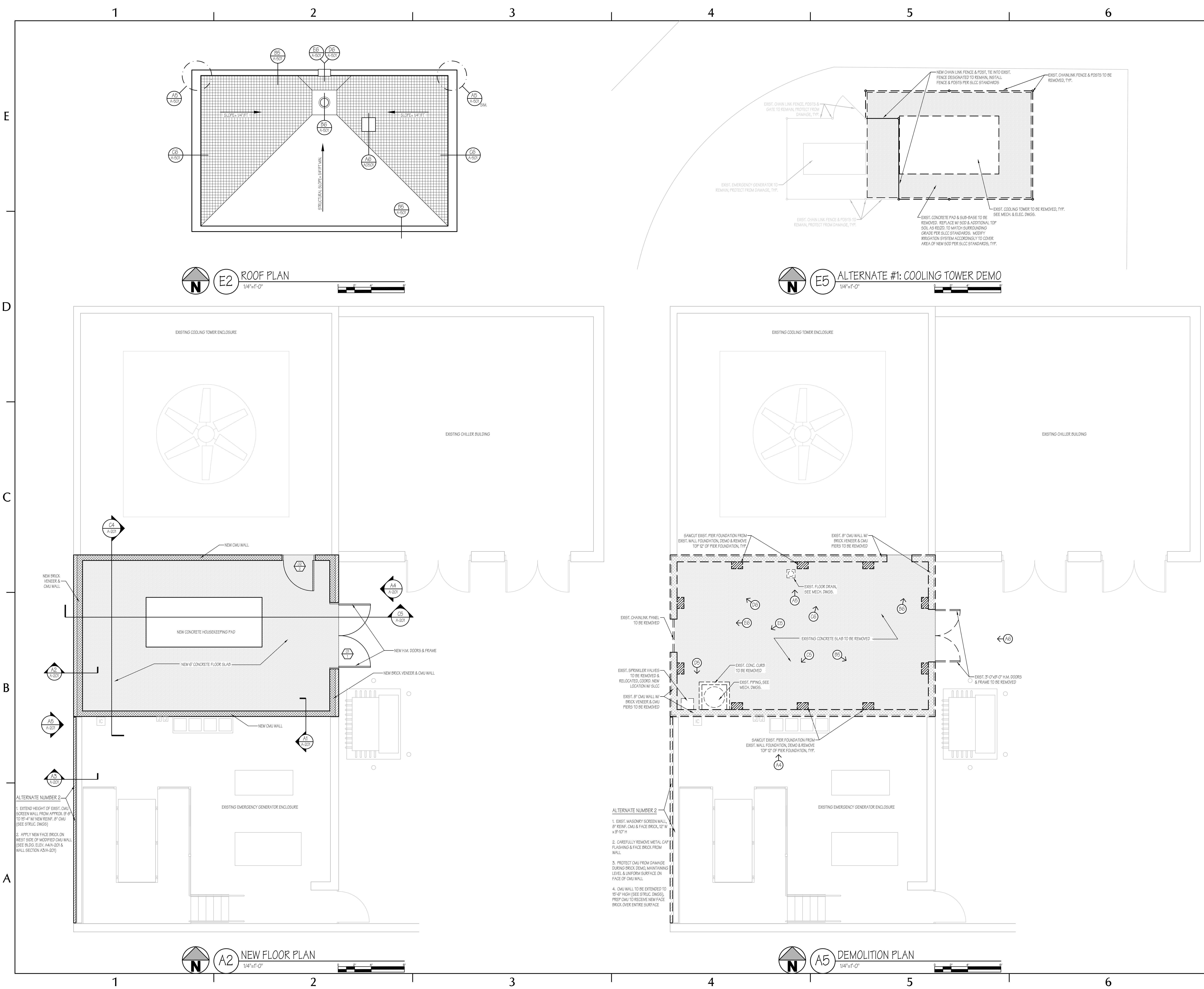
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FOUNDATION PLAN,
ROOF FRAMING PLAN
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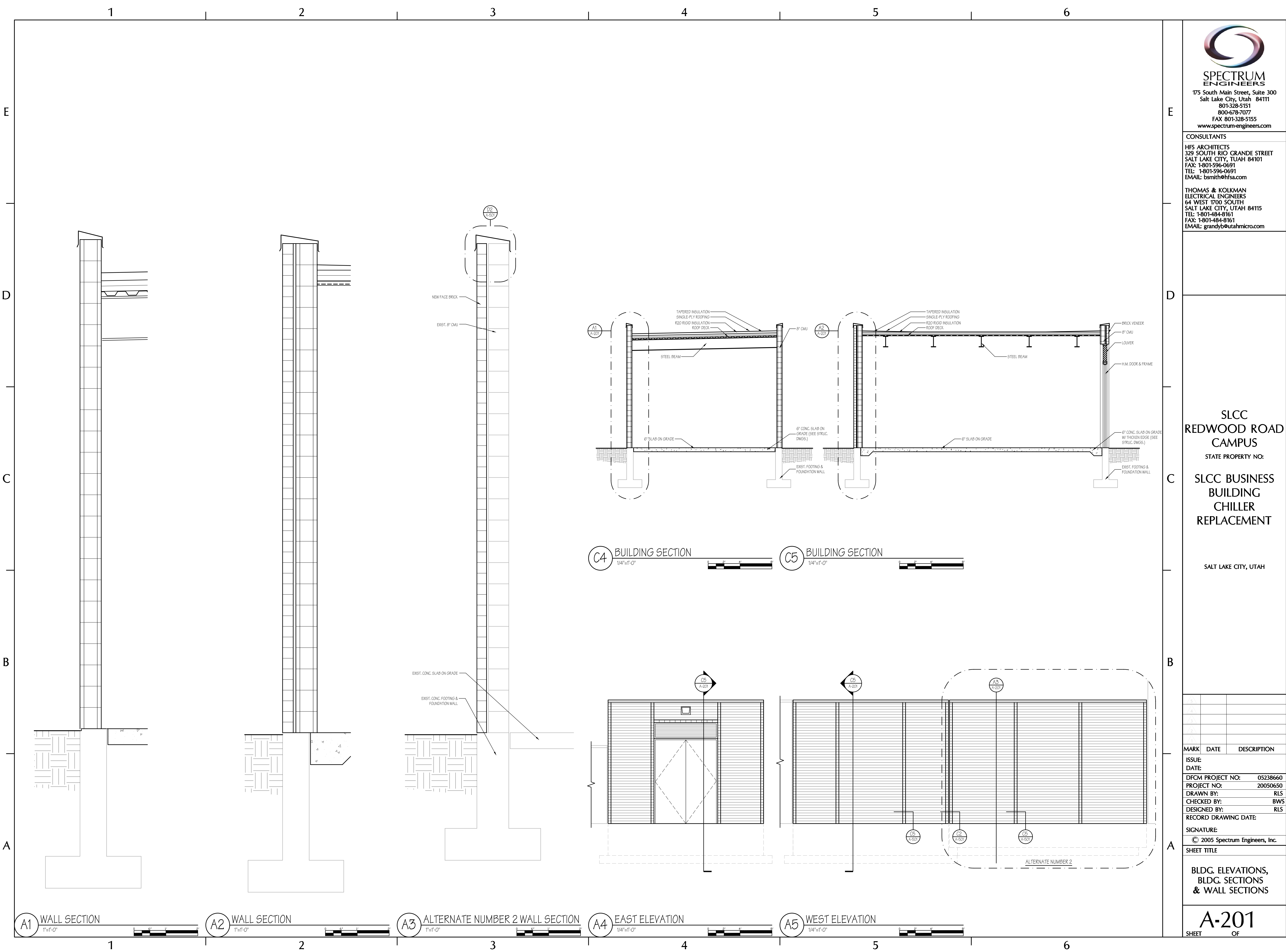
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**DEMOLITION PLAN,
NEW FLOOR PLAN
& ROOF PLAN**





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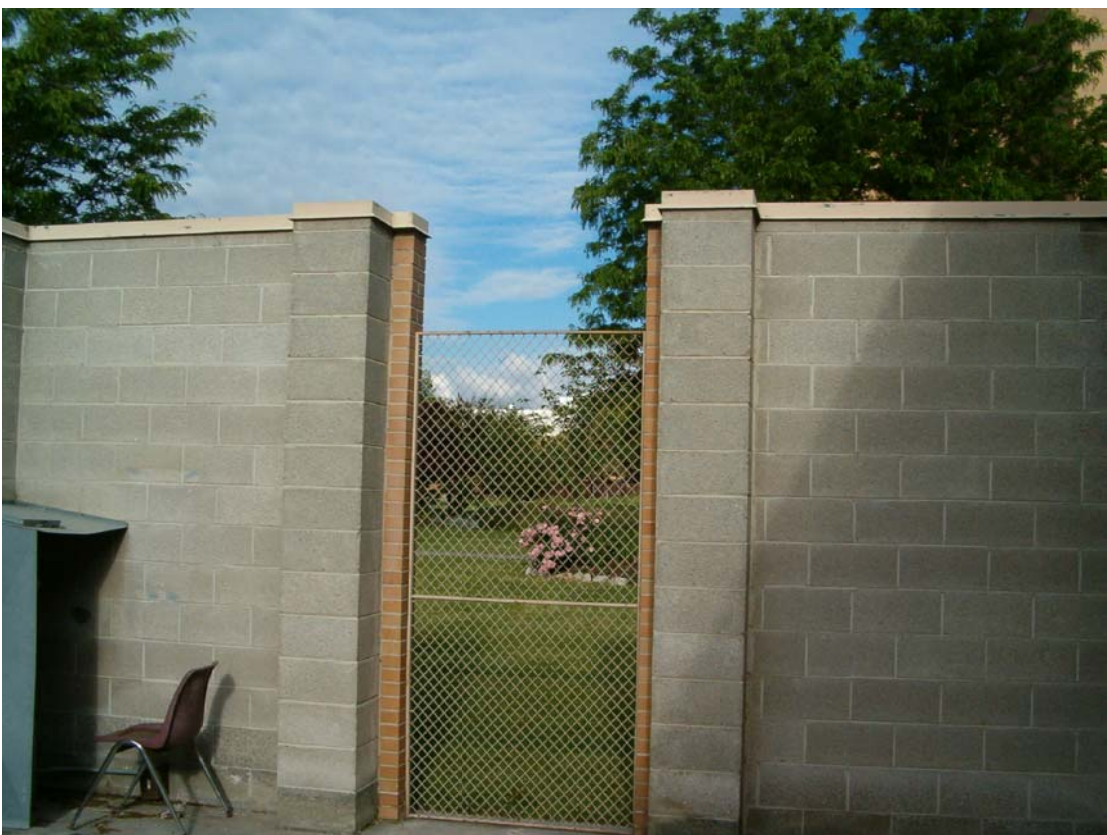
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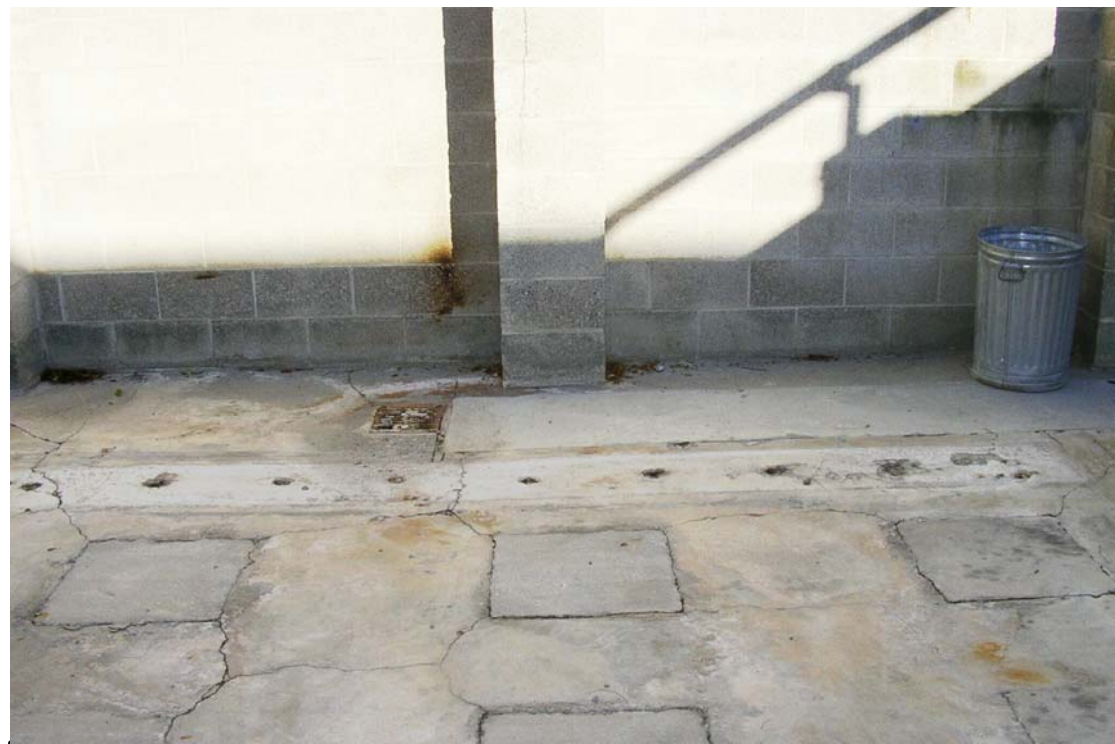
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B6 PHOTO OF EXISTING CONDITIONS



A4 PHOTO OF EXISTING CONDITIONS



A5 PHOTO OF EXISTING CONDITIONS



A6 PHOTO OF EXISTING CONDITIONS



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SALT LAKE CITY, UTAH

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ISSUE: DATE:		
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PROJECT NO: 20050650		
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PHOTOGRAPHS OF
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A-801
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B

A

ABBREVIATIONS			
NOTE: ALL ABBREVIATIONS MAY NOT BE USED			
AD	ACCESS DOOR	MCA	MINIMUM CIRCUIT AMPS
AIR	AIR CONDITION(—ING,—ED)	MFR	MANUFACTURER
COND		MIN	MINIMUM
APD	AIR PRESSURE DROP	N/A	NOT APPLICABLE
BD	BALANCING DAMPER	NC	NORMALLY CLOSED
BHP	BRAKE HORSE POWER	NC	NOISE CRITERIA
BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
BTUH	BTU/HOUR	NO	NORMALLY OPEN
CFH	CUBIC FEET PER HOUR	NPSH	NET POSITIVE SUCTION
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE
CLG	COOLING	OA	OUTSIDE AIR
COMP	COMPONENT	OD	OUTSIDE DIAMETER
COND	CONDENS(—ER,—ING,—ATION)	OZ	OUNCE
CV	CONTROL VALVE	PD	PRESSURE DROP OR DIFFERENCE
CW	COLD WATER	PG	PROPYLENE GLYCOL
DIA	DIAMETER	PH	PHASE
DISCH	DISCHARGE	PPM	PARTS PER MILLION
DP	DEPTH OR DEEP	PRESS	PRESSURE
DB	DRY BULB TEMPERATURE	PSF	POUNDS PER SQUARE FOOT
(E)	EXISTING	PSI	POUNDS PER SQUARE INCH
EER	ENERGY EFFICIENCY RATIO	PSIA	PSI ABSOLUTE
EFT	EFFICIENCY	PSIG	PSI GAUGE
EG	ETHYLENE GLYCOL	R	THERMAL RESISTANCE
ELEC	ELECTRIC	RA	RETURN AIR
ELEV	ELEVATION	RECIRC	RECIRCULATE
ENT	ENTERING	REFR	REFRIGERATION
EVAP	EVAPORAT(—E,—ING,—ED,—OR)	REQD	REQUIRED
EWT	ENTERING WATER TEMPERATURE	RLA	RATED ——— AMPS
EXT	EXTERNAL	RPM	REVOLUTIONS PER MINUTE
(F)	FUTURE	RW	RAINWATER
F	FAHRENHEIT	SA	SUPPLY AIR
FC	FLEXIBLE CONNECT(—OR,—ION)	SC	SHADING COEFFICIENT
FD	FIRE DAMPER	SCFM	STANDARD CUBIC FEET PER MINUTE
FLA	FULL LOAD AMPS	SCW	SOFT COLD WATER
FFI	FINS PER INCH	SF	SAFETY FACTOR
FPM	FEET PER MINUTE	SH	SENSIBLE HEAT
FPS	FEET PER SECOND	SL	SEA LEVEL
FSD	FIRE SMOKE DAMPER	SP	STATIC PRESSURE
FT	FEET	SPECS(S)	SPECIFICATION(S)
GAL	GALLON(S)	SO	SQUARE
OPH	GALLONS PER HOUR	STD	STANDARD
OPM	GALLONS PER MINUTE	STM	STEAM
HD	HEAD	TEMP	TEMPERATURE
HG	MERCURY	TD	TEMP. DROP OR DIFF.
HR	HOUR	THERM	THERMAL
HT	HEIGHT	TOT	TOTAL
HTG	HEATING	TSTAT	THERMOSTAT
HP	HORSE POWER	V	VOLT
HW	HOT WATER	VAC	VACUUM
HZ	HERTZ(FREQUENCY)	VAV	VARIABLE AIR VOLUME
ID	INSIDE DIAMETER	VEL	VELOCITY
IN	INCH	VENT	VENT. VENTILATION
KW	KILOWATT	VERT	VERTICAL
LAT	LEAVING AIR TEMPERATURE	VFD	VARIABLE FREQUENCY DRIVE
LBS	POUNDS	VOL	VOLUME
LG	LENGTH	WC	WATER COLUMN
LH	LATENT HEAT	WG	WATER GAUGE
LRA	LOCKED ROTOR AMPS	WPD	WATER PRESSURE DROP
LVG	LEAVING WATER TEMPERATURE	WTR	WATER
LWT	LEAVING WATER TEMPERATURE	WT	WEIGHT
MAX	MAXIMUM	WB	WET BULB TEMP
MBH	THOUSAND BTU PER HOUR	YR	YEAR

SYMBOL LEGEND	
SYMBOL	DESCRIPTION
PLUMBING PIPING	
—C/WV—	COMBINATION WASTE AND VENT
—	SOIL, WASTE — ABOVE GRADE
—	SOIL, WASTE — BELOW GRADE
-----	VENT
-----	COLD WATER
-----	HOT WATER
-----	HOT WATER CIRCULATE
—RW—	RAINWATER — ABOVE GRADE
—RW—	RAINWATER — BELOW GRADE
—ORW—	OVERFLOW RAINWATER ABOVE GRADE
—ORW—	OVERFLOW RAINWATER BELOW GRADE
—SD—	STORM DRAIN
VTR	VENT THRU ROOF
— / —	NON POTABLE WATER
—(E)—	EXISTING PIPE
////////(E)////////	EXISTING PIPE TO BE REMOVED
—IW—	IRRIGATION WATER
—SS—	SANITARY SEWER
—G—	GAS
HVAC PIPING	
—HWS—	HOT WATER SUPPLY
—HWR—	HOT WATER RETURN
—CWS—	CHILLED WATER SUPPLY
—CWR—	CHILLED WATER RETURN
—RL—	REFRIGERANT LIQUID
—C—	CONDENSER WATER SUPPLY
—CR—	CONDENSER WATER RETURN
—D—	DRAIN LINE
—HG—	HOT GAS BYPASS
—(E)—	EXISTING PIPE
////////(E)////////	EXISTING PIPE TO BE REMOVED

SYMBOL LEGEND	
SYMBOL	DESCRIPTION
VALVES, METERS, AND GAUGES	
—	SHUT OFF VALVE
—	GATE VALVE
—	CHECK VALVE
—	AUTO 2-WAY VALVE
—	AUTO 3-WAY VALVE
—	GLOBE VALVE
—	BALL VALVE
—	RELIEF VALVE
—	CHAIN OPERATED GATE VALVE
—	PRESSURE REDUCING VALVE
—	BUTTERFLY VALVE
—	SOLENOID VALVE
—	ANGLE VALVE
—	VENTURI
—	BALANCING OR PLUG COCK
—	FLOW SETTER
—	GAS COCK
—	MANUAL AIR VENT
—	STRAINER
—	GAUGE COCK
—	FLEXIBLE CONNECTION
—	PRESSURE GAUGE
—	THERMOMETER
—	VICTUALIC COUPLING
—	REDUCER CONCENTRIC
—	REDUCER ECCENTRIC
—	90° ELBOW UP
—	90° ELBOW DOWN
—	90° TEE UP
—	90° TEE DOWN
—	UNION
—	CAPPED PIPE
—	ANCHOR
HVAC SYMBOLS	
①	THERMOSTAT
⑤	TEMPERATURE SENSOR
PLUMBING SYMBOLS	
▤ C.B.	CATCH BASIN
○ M.H.	MANHOLE
—+ W.H.	WALL HYDRANT
— / H.B.	HOSE BIBB
—⊕	CLEANOUT TO GRADE
—⊕	FLOOR CLEANOUT
—	WALL CLEANOUT
▤	1/2 GRATE
▤	3/4 GRATE
▤	FULL GRATE

GENERAL MECHANICAL NOTES

- DO NOT ROUTE DUCTS AND PIPES ABOVE ELECTRICAL PANELS. ALL ELECTRICAL PANELS MUST HAVE CLEAR ACCESS SPACE IN FRONT OF PANEL 4'-0" DEEP AND 6'-8" HIGH. DO NOT ROUTE DUCTS AND PIPES IN ELECTRICAL ROOMS, EXCEPT DUCTS AND PIPES SERVING THE ROOM.
- ALL DUCT DIMENSIONS ARE INSIDE FREE AREA DIMENSIONS. ADJUST SHEET METAL DIMENSION FOR LINED DUCT.
- ALL FIRE DAMPERS SHOWN ARE 1-1/2 HOUR UNLESS OTHERWISE NOTED.
- IF CONTRACTOR ENCOUNTERS MATERIAL WHICH MAY CONTAIN ASBESTOS IMMEDIATELY STOP WORK IN THIS AREA AND NOTIFY THE OWNER.
- STEEL ROOF DECK SHALL NOT BE USED TO SUPPORT LOADS FROM PIPING, DUCTWORK OR EQUIPMENT, UNLESS NOTED OTHERWISE. HANGER LOADS LESS THAN 50 LBS. MAY BE HUNG FROM THE STEEL ROOF DECK IN CASES WHEN HANGING FROM THE STEEL ROOF DECK CANNOT BE AVOIDED; THE ATTACHMENT METHOD MUST DISTRIBUTE THE LOAD ACROSS THE DECK AS APPROVED BY THE STRUCTURAL ENGINEER.

MECHANICAL SHEET INDEX

SHEET NO	SHEET TITLE
M-001	MECHANICAL SYMBOL LEGEND AND GENERAL NOTES
M-100	BUSINESS BUILDING PARTIAL PLOT PLAN ALTERNATE #1
M-101	MECHANICAL ROOM PLAN
M-501	MECHANICAL DETAILS AND SCHEDULES
M-601	PIPING SCHEMATIC

SYMBOL LEGEND

SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
# SHEET	DETAIL INDICATOR: # INDICATES DETAIL NUMBER, SHEET INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
# SHEET	ELEVATION OR SECTION INDICATOR, EXTERIOR: # INDICATES ELEVATION OR SECTION NUMBER, SHEET INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
# SHEET	ELEVATION OR SECTION INDICATOR, INTERIOR: # INDICATES ELEVATION OR SECTION NUMBER, SHEET INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
100	ROOM OR SPACE NUMBER.
1	KEYNOTE INDICATOR.
△	REVISION INDICATOR.
<CU-1>	EQUIPMENT INDICATOR.
P-	PLUMBING FIXTURE INDICATOR.
TYPE CFM SIZE	DIFFUSER/GRILLE INDICATOR.
TYPE SIZE	DIFFUSER/GRILLE INDICATOR.
— / —	BREAK, STRAIGHT
⋈	BREAK, ROUND.
MATCH LINE SEE XX/X-XXX	MATCH LINE INDICATOR
-----	HIDDEN FEATURES LINE: HIDDEN, THIN LINE.
- - - - -	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
—⊕	NEW CONNECTION POINT TO EXISTING

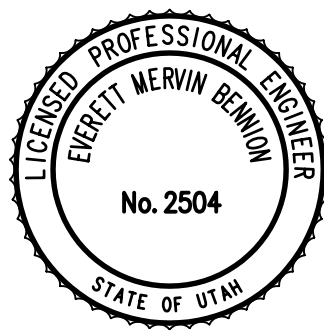


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SHEET TITLE

**MECHANICAL
SYMBOL LEGEND
& GENERAL NOTES**

M-001

SHEET OF

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A1 BUSINESS BUILDING PARTIAL PLOT PLAN ALTERNATE #1

SCALE: 1/8" = 1'-0"

B4 BUSINESS BUILDING PIPING MODIFICATIONS ALT. #1

SCALE: NTS

SHEET KEYNOTES

1. REMOVE EXISTING COOLING TOWER.
2. EXISTING CONDENSER WATER PIPING TO BE REMOVED TO HORIZONTAL RUNS BELOW GRADE. CAP HORIZONTAL RUNS AT ENDS.
3. EXISTING HYDRANT. REMOVE TO HORIZONTAL BELOW GRADE. CAP AT SOURCE IN TUNNEL.
4. REMOVE MAKE UP WATER LINE AND VALVES. CAP AT SOURCE.
5. CAP CONDENSER WATER LINES IN TUNNEL.
6. REMOVE CONDENSER WATER LINES IN MECHANICAL ROOMS.
7. EXISTING CONDENSER WATER LINES IN TUNNEL TO REMAIN.
8. IN CHILLER ROOM THE TWO EXISTING CHILLED WATER PUMPS ARE TO REMAIN. THEY SHALL BE RE-PIPED AS PRIMARY AND STANDBY TO SUPPLY FAN UNIT COOLING COIL WITH CHILLED WATER FROM CAMPUS CHILLED WATER LOOP.
9. REMOVE CHILLER AND EXISTING CHILLED WATER PIPING IN CHILLER ROOM. RECONNECT LOOP PIPING TO SERVE PUMPS AND AIR HANDLER COOLING COIL. VALVES AND FLOW METERS SHALL BE SALVAGED AND GIVEN TO OWNER.
10. EXISTING TRANSFORMER.
11. EXISTING CHAIN LINK FENCE.
12. EXISTING CWR MAIN. FIELD VERIFY.
13. EXISTING CWS MAIN. FIELD VERIFY.
14. NEW MAINTENANCE VALVES.
15. BTU METER TO BE USED TO METER BUSINESS BUILDING FAN UNIT.
16. NEW BYPASS VALVE LOCATION N.C.
17. BUSINESS BUILDING COOLING COIL.
18. REMOVE EXISTING CONDENSER WATER PUMP AND WARRIC CONTROL. BOLT STEEL PLATES OVER OPENINGS. CLEAN OUT SUMP.
19. EXISTING CHILLED WATER LINES TO BE REMOVED.



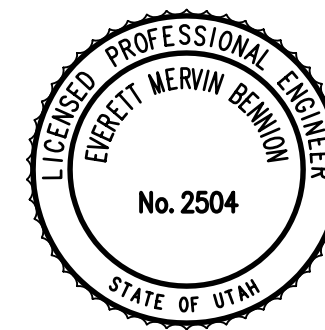
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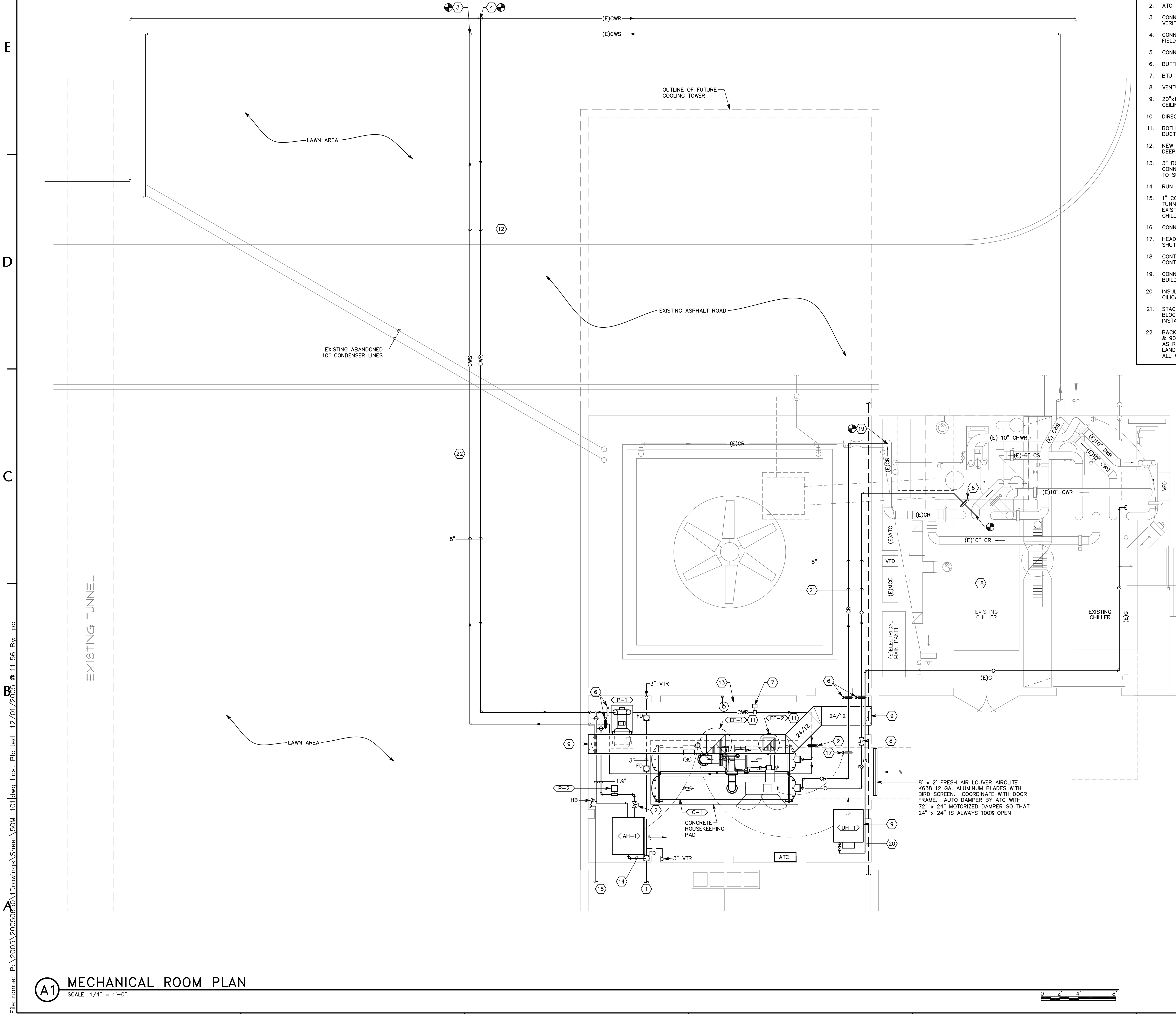
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**ALTERNATE #1
BUSINESS BUILDING
PARTIAL PLOT PLAN**

M-100
SHEET OF

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SHEET KEYNOTES

1. FD - FLOOR DRAIN, 2" SMITH 2246, NEW 2" CAST IRON LINE. RUN THROUGH EXISTING CORRUGATED CONCRETE TUNNEL TO ADMIN. BUILDING TUNNEL. CONNECT TO EXISTING WASTE LINE DOWNSTREAM FROM EXISTING FLOOR DRAIN. CLEAN EXISTING DRAIN LINE TO SUMP AND CLEAN OUT SUMP. SAW CUT CONCRETE AS REQUIRED AND PATCH.
2. ATC ISOLATION VALVE.
3. CONNECT TO EXISTING (CWS) CHILLED WATER SUPPLY MAIN. FIELD VERIFY PRIOR TO CONNECTION.
4. CONNECT TO EXISTING 12" (CWR) CHILLED WATER RETURN MAIN. FIELD VERIFY PRIOR TO CONNECTION.
5. CONNECT TO EXISTING (CR) CONDENSER RETURN TO COOLING TOWER.
6. BUTTERFLY MAINTENANCE VALVES.
7. BTU METER FOR 8" PIPE.
8. VENTURI FLOW METER.
9. 20"x12" EG-1, TITUS 355RL-HD, ONE AT FLOOR AND ONE AT CEILING OF DUCT RISER.
10. DIRECT AIR FROM UNIT HEATER AT FRESH AIR LOUVER.
11. BOTH EXHAUST FANS CONNECT TO SAME HORIZONTAL EXHAUST DUCT.
12. NEW CHILLED WATER MAINS, 8" SCHEDULE 80 PVC BURIED 3'-6" DEEP IN SAND.
13. 3" ROOF DRAIN, SMITH FIG 1010 ERC & 1080 ERC OVERFLOW. CONNECT ROOF DRAIN TO EXISTING UNDERGROUND ROOF DRAIN LINE TO SUMP.
14. RUN 3/4" DRAIN LINE FROM FAN COIL DRAIN PAN TO FLOOR DRAIN.
15. 1" COPPER COLD WATER LINE THROUGH EXISTING CORRUGATED TUNNEL TO ADMIN. BUILDING EQUIPMENT ROOM. CONNECT TO EXISTING COLD WATER MAIN. PROVIDE 3/4" HOSE BIBB IN NEW CHILLER ROOM.
16. CONNECT AT EXISTING FLANGE.
17. HEAD PRESSURE CONTROL VALVE BY CHILLER MANUFACTURER TO SHUT WHEN CHILLER IS OFF.
18. CONTROL CONTRACTOR TO PROVIDE CHILLER HEAD PRESSURE CONTROL TO CONTROL EXISTING HEAD PRESSURE CONTROL VALVE.
19. CONNECT NEW CR TO EXISTING ECR AT EXISTING FLANGE IN BUILDING.
20. INSULATE GENERATOR EXHAUST PIPE WITH 2 INCH THICK CALCIUM CHLORIDE INSULATION WITH PVC JACKET IN CHILLER ROOM.
21. STACK PIPES ALONG WALL SO PIPES WILL DRAIN TO SUMP AND NOT BLOCK COOLING TOWER AIR. PROVIDE SHOP DRAWING BEFORE INSTALLATION.
22. BACKFILL TRENCHES, COMPACT TO 85% UNDER LANDSCAPED AREAS & 90% UNDER PAVED AREAS, PATCH & REPAIR SPRINKLER SYSTEM AS REQUIRED - INCLUDING WIRING, PATCH & REPAIR SOD, LANDSCAPING, PAVING & CURB AND GUTTERS TO MATCH EXISTING. ALL WORK MUST MEET CAMPUS STANDARDS.

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M-101		
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A

CHILLER SCHEDULE (CENTRIFUGAL WATER COOLED)

SYMBOL	MANUFACTURER & MODEL NUMBER	CAPACITY (TONS)	CHILLED WATER (1)				CONDENSER WATER				MODULATE TO (%)	ELECTRICAL			REFRIG.	FULL LOAD (KW)	FULL LOAD (KW/TON)	NPLV (KW/TON)	EVAP. FOULING FACTOR	COND. FOULING FACTOR	MAXIMUM DIMENSIONS (L x W x H)	COMMENTS
			GPM	FWT (°F)	LWT (°F)	P.D. (FT.HD.)	GPM	FWT (°F)	LWT (°F)	P.D. (FT.HD.)		MCA	VOLT	PHASE								
C-1	CARRIER 19XR-4747372CPH64	564	1352	45	55	29.3	1556	80	90	25.1	25	687	460	3	134A	289	.513	.500	.00010	.00025	16'-0" x 6'-6" x 7'-0"	(1) (2) (3) (4) (5) (6) (7)
	RATINGS WITH 80° TO 97.1° F. CW	500	1199	45	55	20.2	816.3	80	97.1	7.4	25	509	460	3	134A	278	.555	.528	.00010	.00025		
C-1	YORK YKCGF07-CPF	560	1350	45	55	14.9	1550	80	90	16.4	25	534	460	3	134A	288	.514	.473	.00010	.00025	16'-0" x 6'-6" x 7'-0"	(1) (2) (3) (4) (5) (6) (7)
	RATINGS WITH 80° TO 97.1° F. CW	560	1200	45	55	12.1	816	80	97.1	5.2	25	524	460	3	134A	302	.566	.566	.00010	.00025		

- CHILLER RATING AT 4500' FEET ELEVATION.
- CHILLER MUST MEET BOTH RATINGS.
- DEMAND LIMIT CONTROL PACKAGE.
- FURNISH WITH HEAD PRESSURE CONTROL PACKAGE.
- CHILLER CONTROL MUST INTERFACE WITH JOHNSON MEDASYS SYSTEM FOR MONITORING AND CONTROL.
- CHILLER MUST NOT EXCEED LISTED DIMENSIONS.
- CHILLER MAY BE CARRIER OR YORK AT LISTED CAPACITIES.

TWO-PIPE FAN COIL UNIT SCHEDULE

SYMBOL	MANUFACTURER	MODEL NO.	LOCATION	FAN CFM	O.A. CFM	COOLING REQUIREMENTS										ELECTRICAL					OPERATING WEIGHT (LBS)	COMMENTS
						45F ENTERING WATER/AIR TEMP																
						MIN. SENS. MBH	MIN. TOTAL MBH	DB	WB	GPM	MAX LOSS THRU COIL (FT. WATER)	RUN-OUT SIZE	MOTOR H.P.	RPM	VOLT	PHASE	HZ.					
FQU-1	CARRIER	42BHC30	CHILLER RM	3000	—	60	70.2	75	63	14	10	1.25	1.5	960	480	3	60	500	(1) (2) (3) (4)			

- 2" PLEATED 30% EFF FILTER IN SIDE OUTLET HOLDING FRAME
- 4 ROW CHILLED WATER COIL
- DISCHARGE AIR PLENUM WITH DOUBLE DEFLECTION GRILLE
- ALL RATINGS AT 4500 FT ELEVATION

PUMP SCHEDULE

SYMBOL	MANUFACTURER AND MODEL NO.	GPM	HEAD FT.	H.P.	RPM	EFF. %	VOLTS/PHASE/CYCLE	EQUIPMENT OR AREA SERVED	COMMENTS
P-1	B&G VSC SERIES 8 x 8 x 10 1/2 L	1352	100	60	1750	79	480/60/3	CHILLED WATER	(1) VERTICAL SPLITCASE WITH VFD MOTOR
P-2	B&G 116A SERIES 90	14	27	1/2	1750	35	120/60/3	FAN COIL	INLINE

- NEW VFD BY DIVISION 16.

EXHAUST FAN SCHEDULE

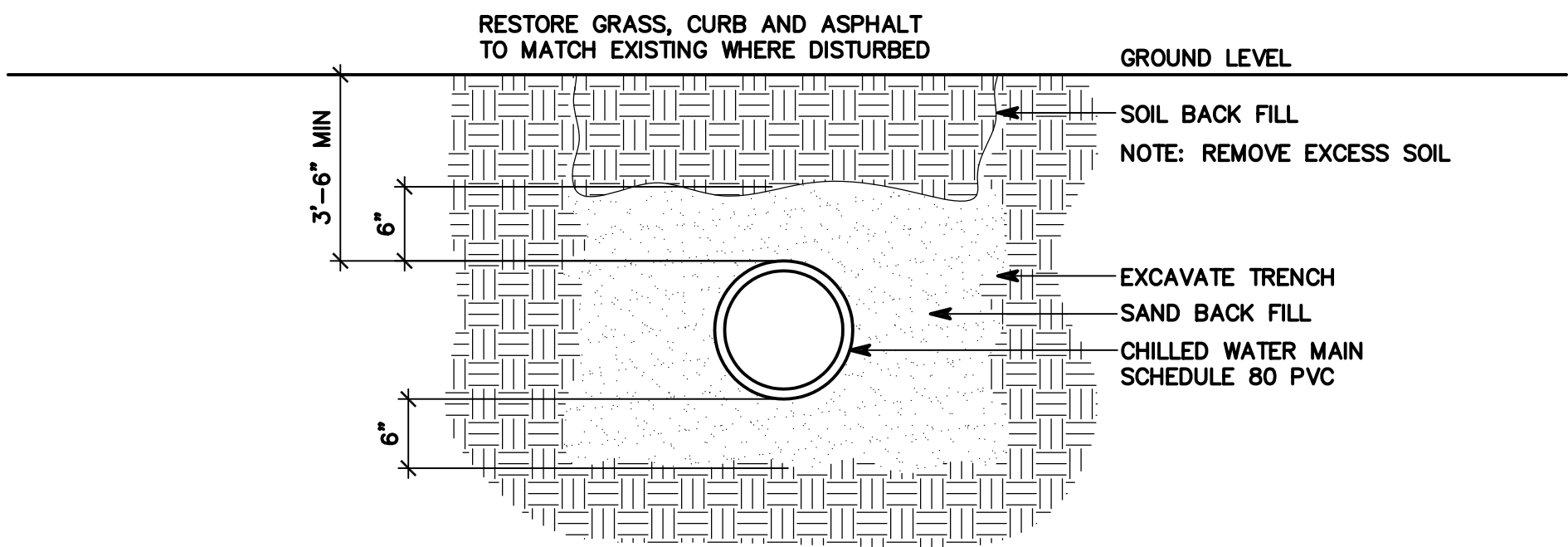
SYMBOL	MANUFACTURER	MODEL NO.	CFM	STATIC PRESSURE IN WG.	H.P.	RPM	VOLTS/PHASE/CYCLE	AREA SERVED	COMMENTS
EF-1	LOREN-COOK	225 ACEB	3500	0.25	0.5	595	120/1/60	CHILLER ROOM	(1)(2)(3)
EF-2	LOREN-COOK	80 ACEB	350	0.15	0.167	535	120/1/60	CHILLER ROOM	(1)(2)(3)

- ALL CAPACITIES AT 4500 FT. ELEVATION
- ROOF MOUNTED DOME EXHAUST FAN. COMPLETE WITH PRE-FAB CURB, MOTORIZED BACKDRAFT DAMPER BIRD SCREEN, INTEGRAL THERMAL OVERLOAD PROTECTION AND SERVICE DISCONNECT.
- CONTROL: ATC

GAS FIRED UNIT HEATER SCHEDULE

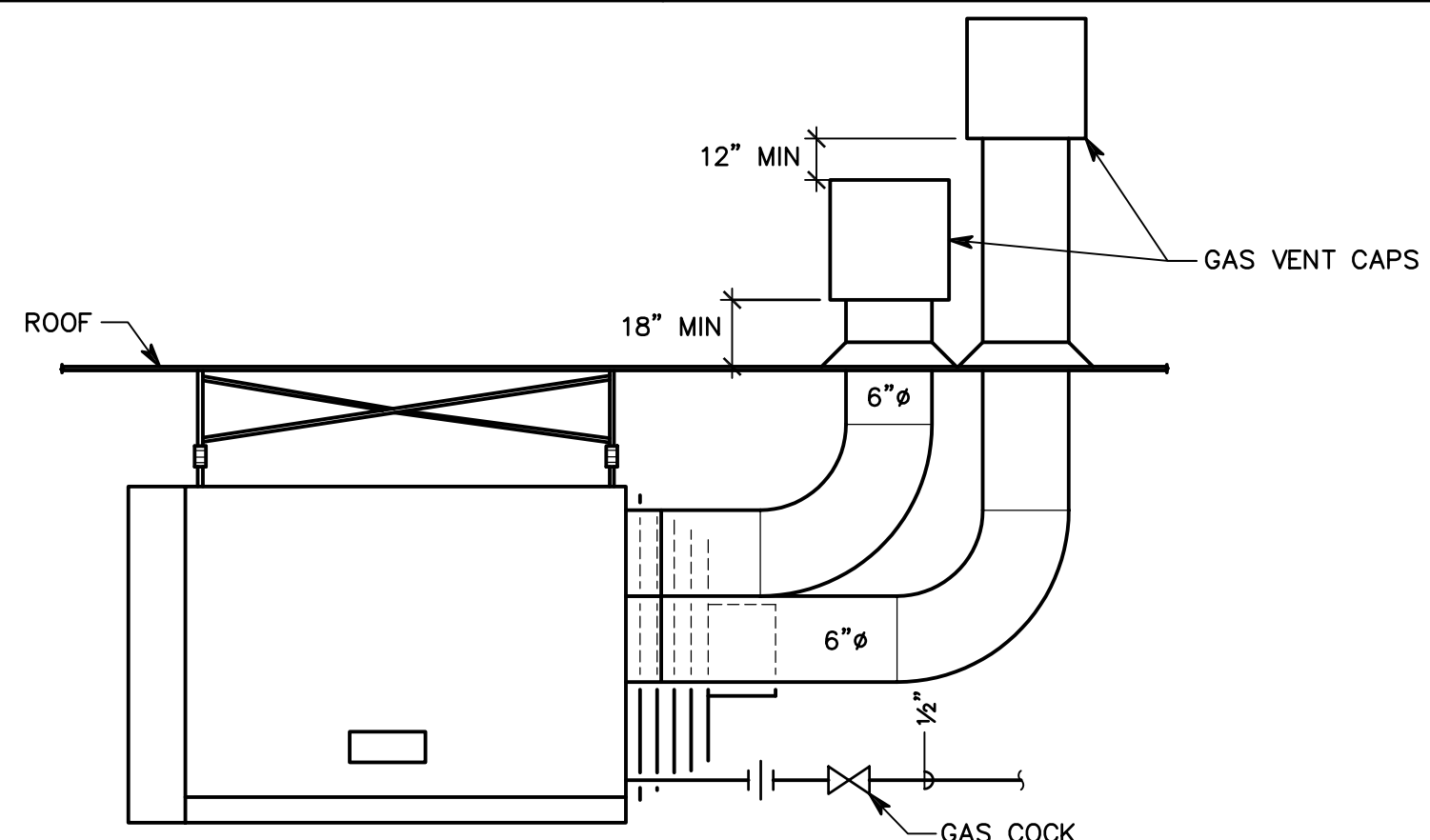
SYMBOL	MANUFACTURER	MODEL	FUEL	INPUT BTU/HR	OUTPUT BTU/HR	FLUE SIZE	AIR DELIVERY	MOTOR H.P.	COMMENTS
UH-1	REZNOR	UDAS 150	NG	150,000	124,500	6"	1921	1/4	(1) (2) (3)

- SEALED COMBUSTION
- SEA LEVEL RATING
- REMOTE THERMOSTAT



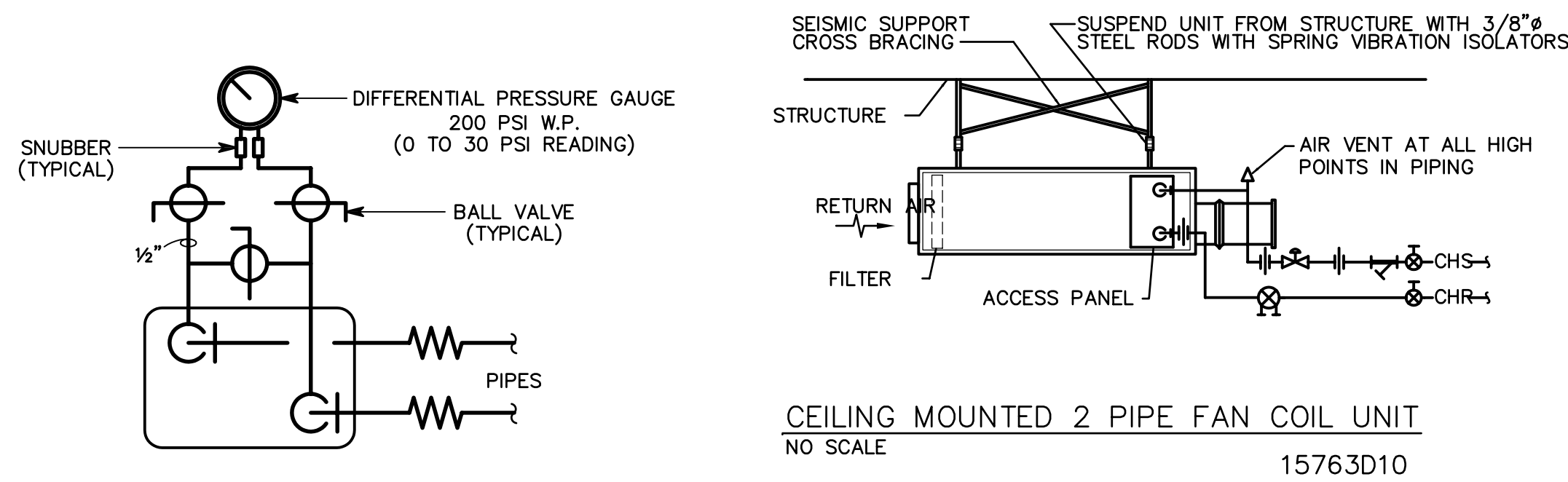
C3 UNDERGROUND PIPING DETAIL

SCALE: NOT TO SCALE



E5 GAS FIRED UNIT HEATER DETAIL

SCALE: NOT TO SCALE

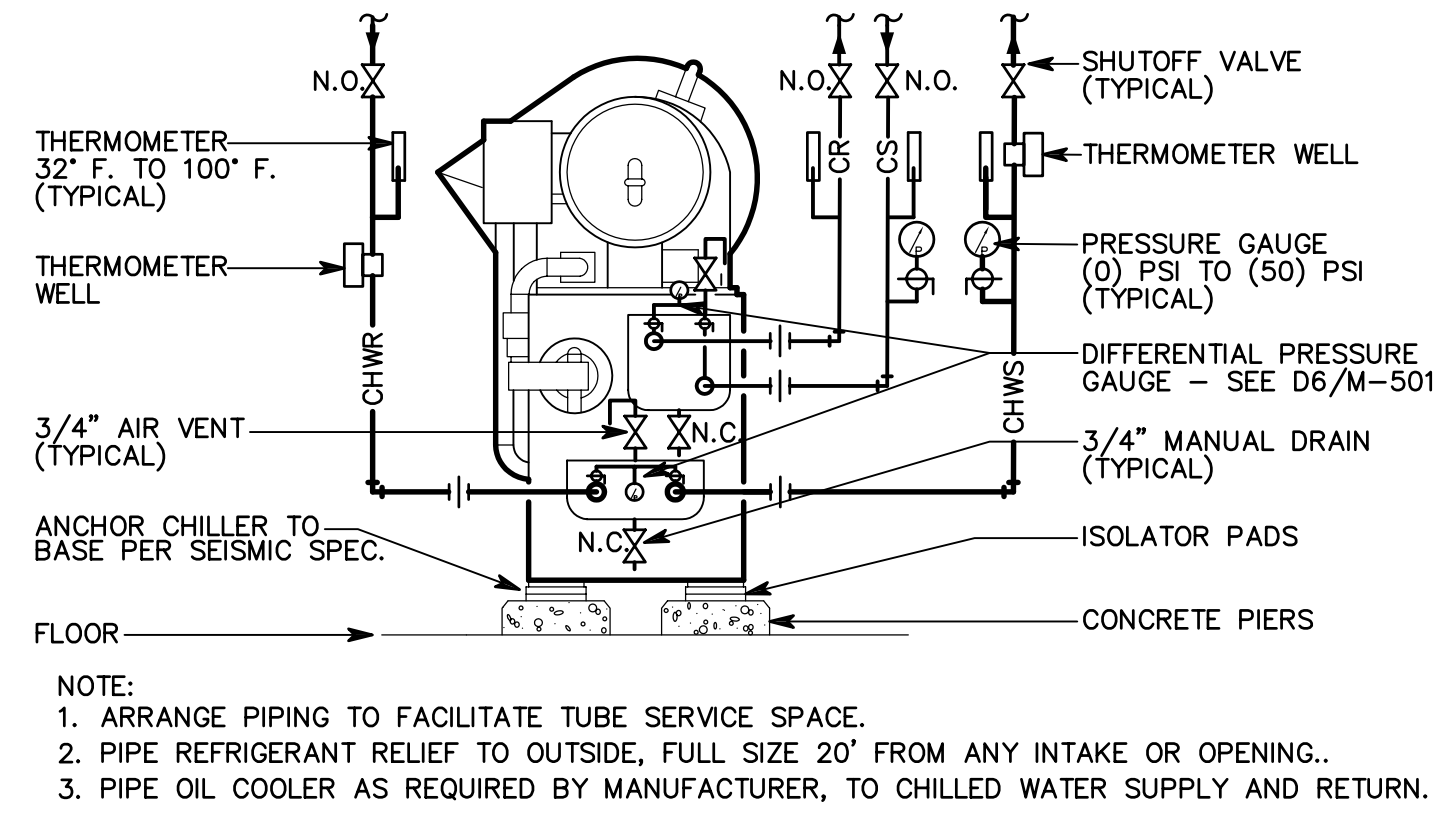


D5 DIFFERENTIAL PRESSURE GAUGE

SCALE: NOT TO SCALE

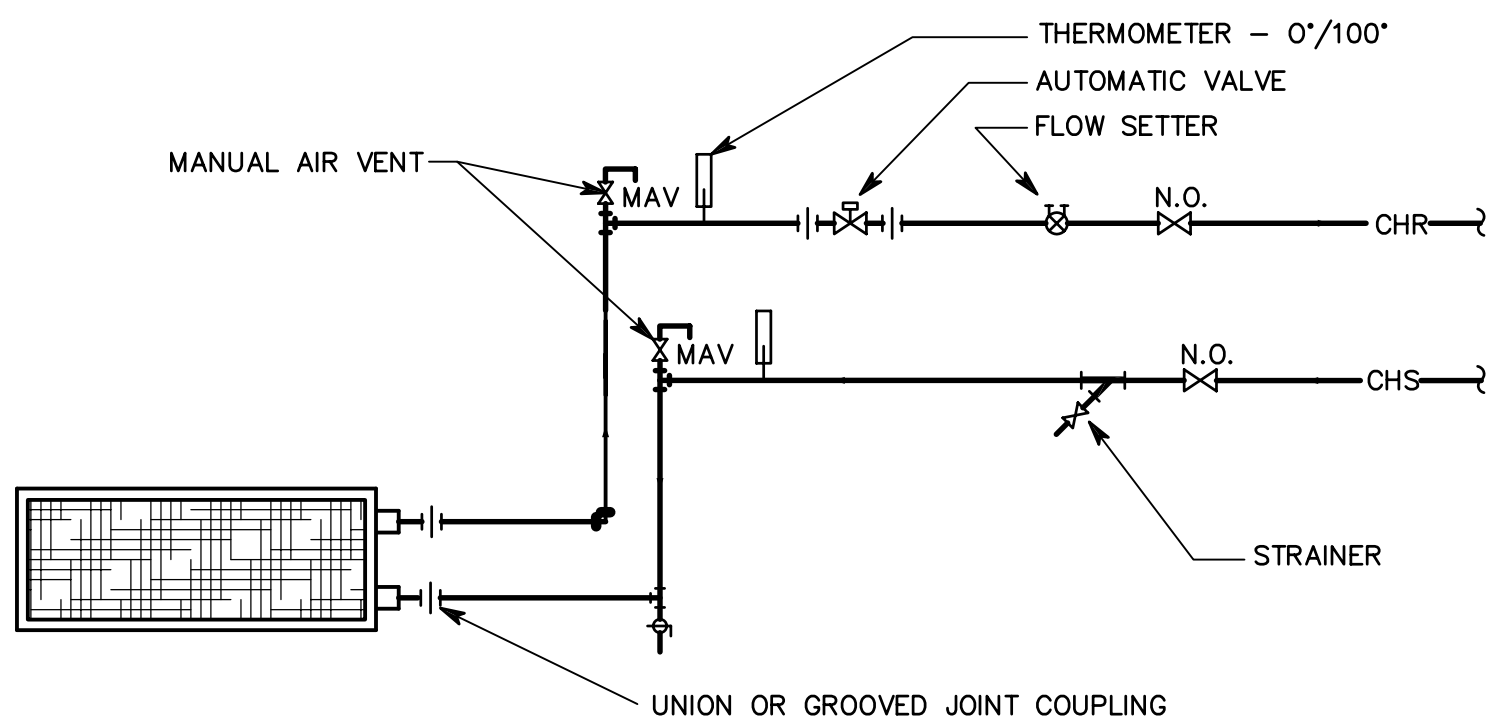
D6 CEILING MOUNTED 2 PIPE FAN COIL UNIT

SCALE: NOT TO SCALE



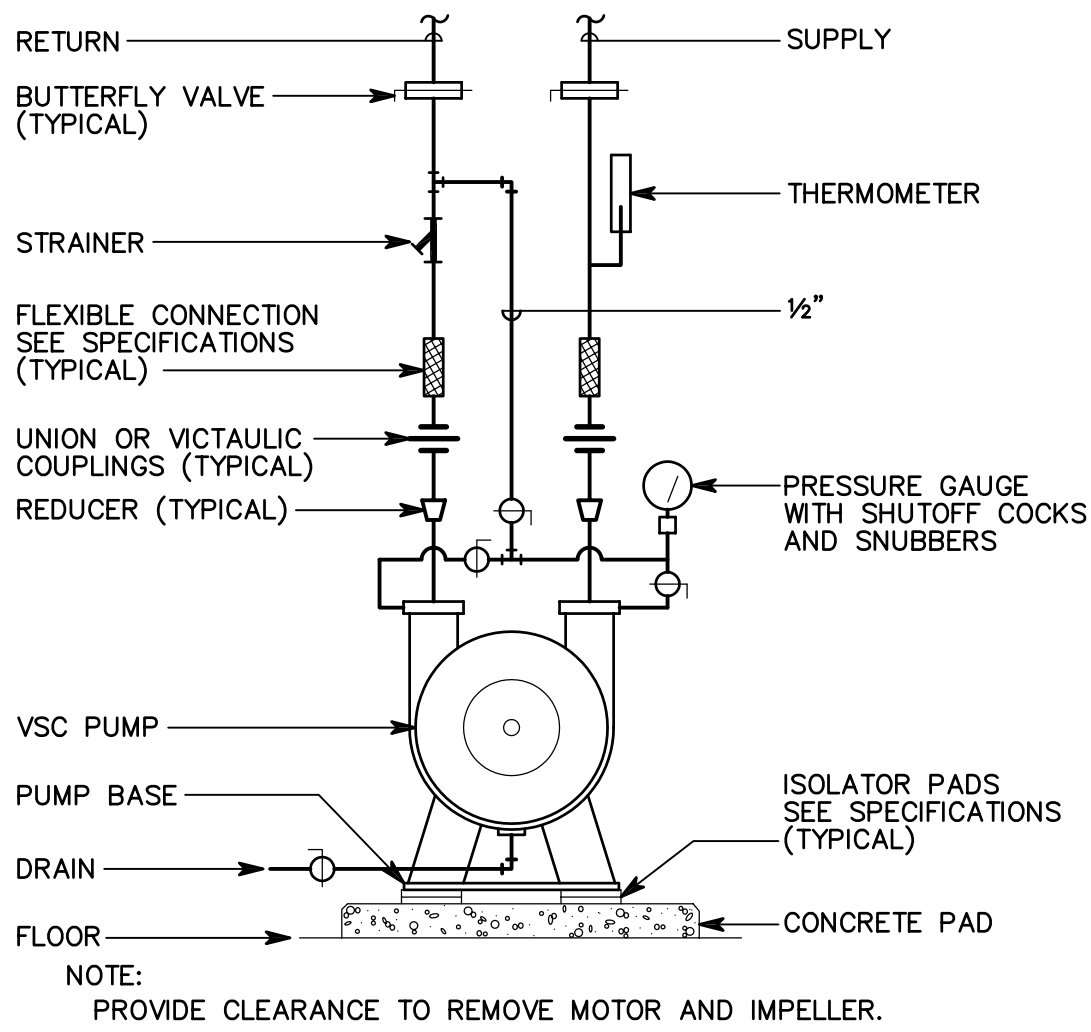
C5 CHILLER PIPING SCHEMATIC

SCALE: NOT TO SCALE



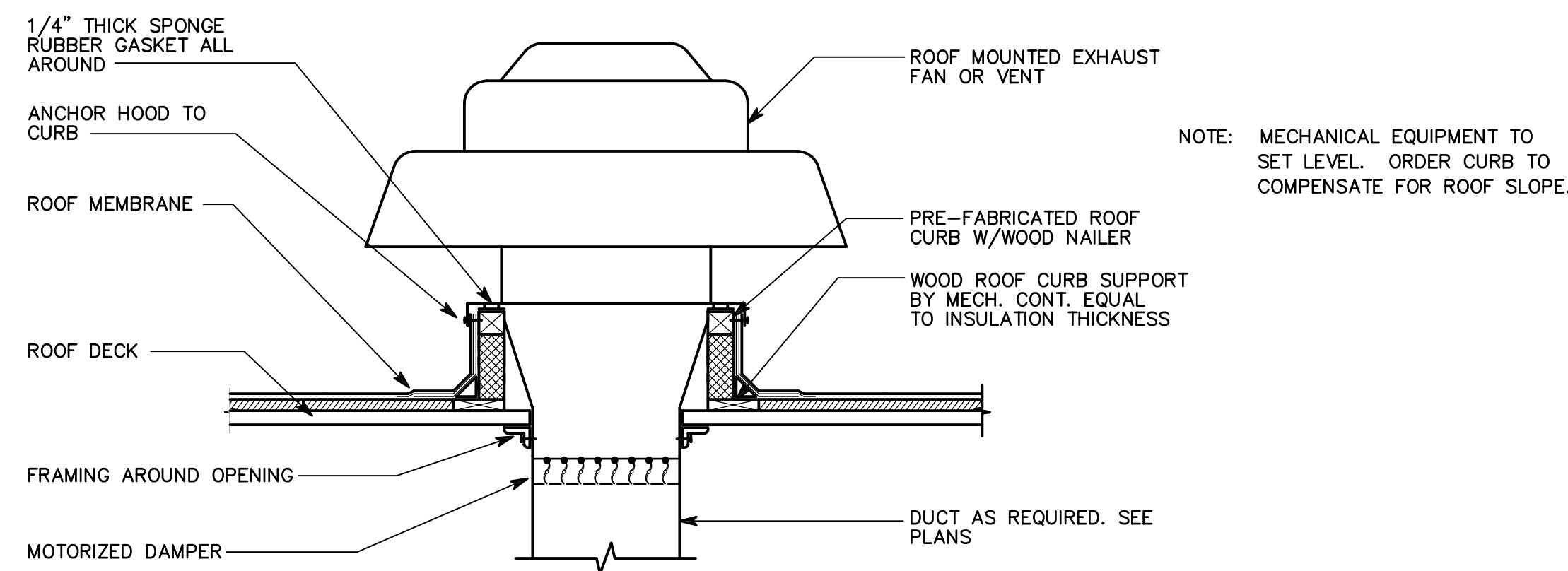
B5 COOLING COIL DETAIL

SCALE: NOT TO SCALE



A4 VCS PUMP CONNECTION

SCALE: NOT TO SCALE



A5 ROOF MOUNTED EXHASUT FAN DETAIL

SCALE: NOT TO SCALE



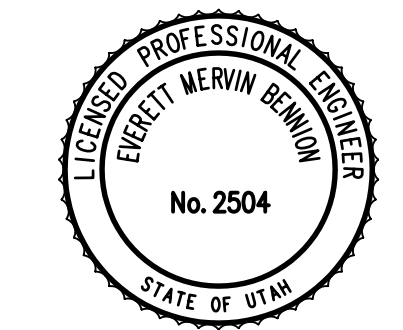
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STATE PROPERTY NO:

SLCC BUSINESS
BUILDING
CHILLER
REPLACEMENT

SALT LAKE CITY, UTAH

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PROJECT NO: 20050650

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SHEET TITLE

MECHANICAL
DETAILS &
SCHEDULES

M-501
SHEET OF

File name: P:\2005\20050650\Drawings\Sheet\50M-601.dwg Last Plotted: 12/01/2005 @ 11:55 By: lpc

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SHEET KEYNOTES

- EXISTING BTU METERS.
- NEW BTU METERS.



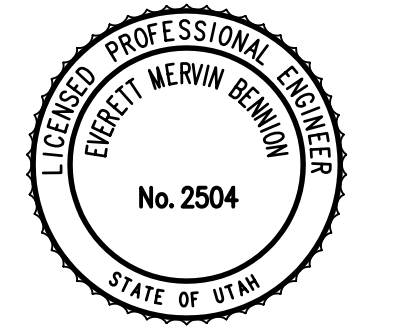
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SHEET TITLE

PIPING
SCHEMATIC

M-601

SHEET OF

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A1 PIPING SCHEMATIC

SCALE: NOT TO SCALE

Business Bldg.

Technology Bldg.

College Center

Main

East

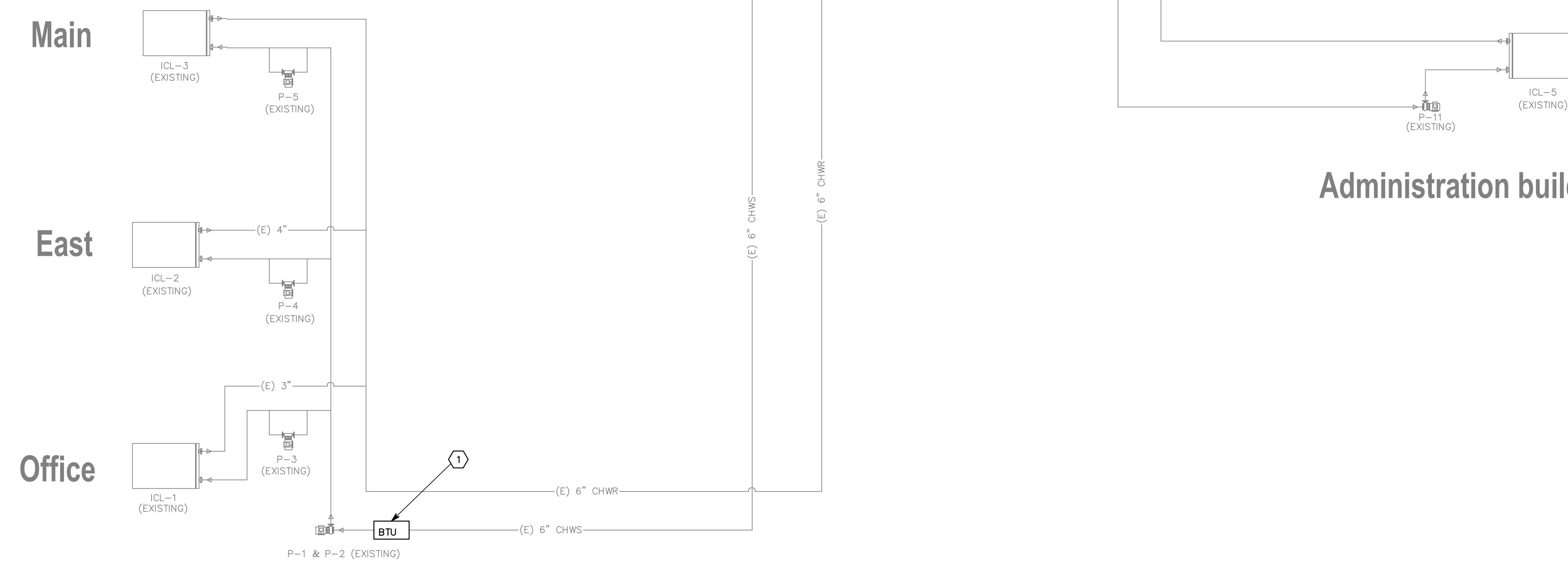
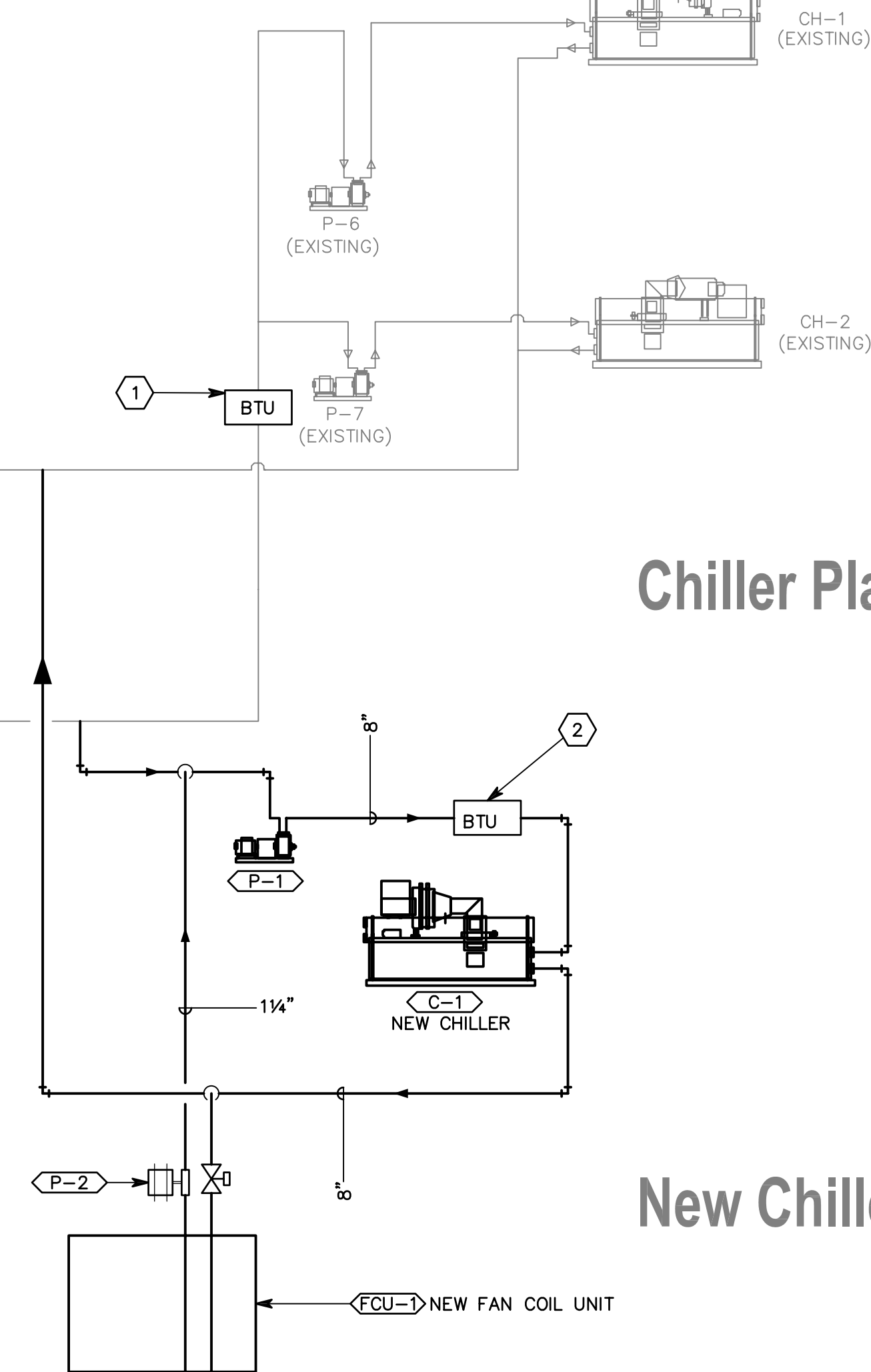
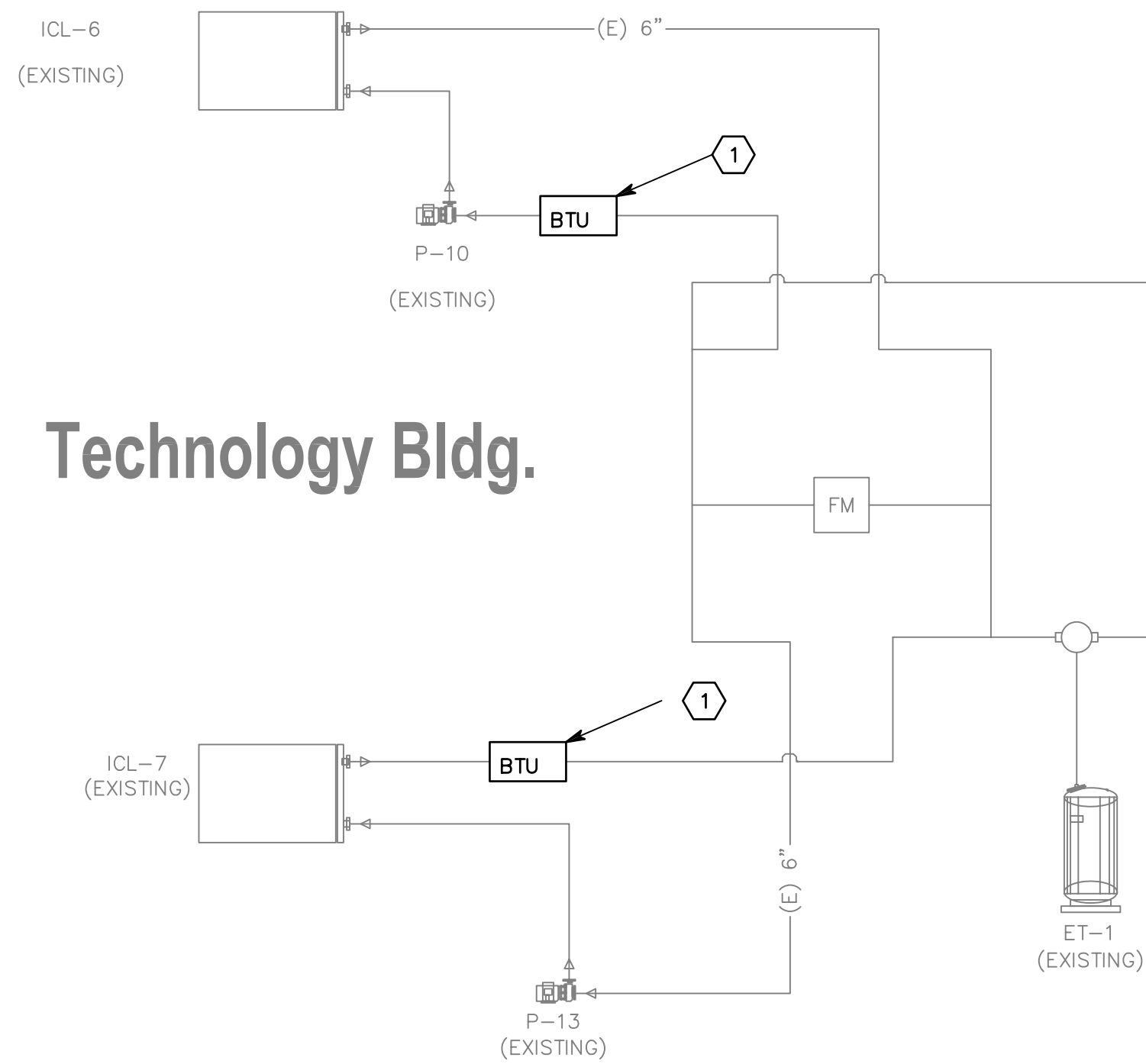
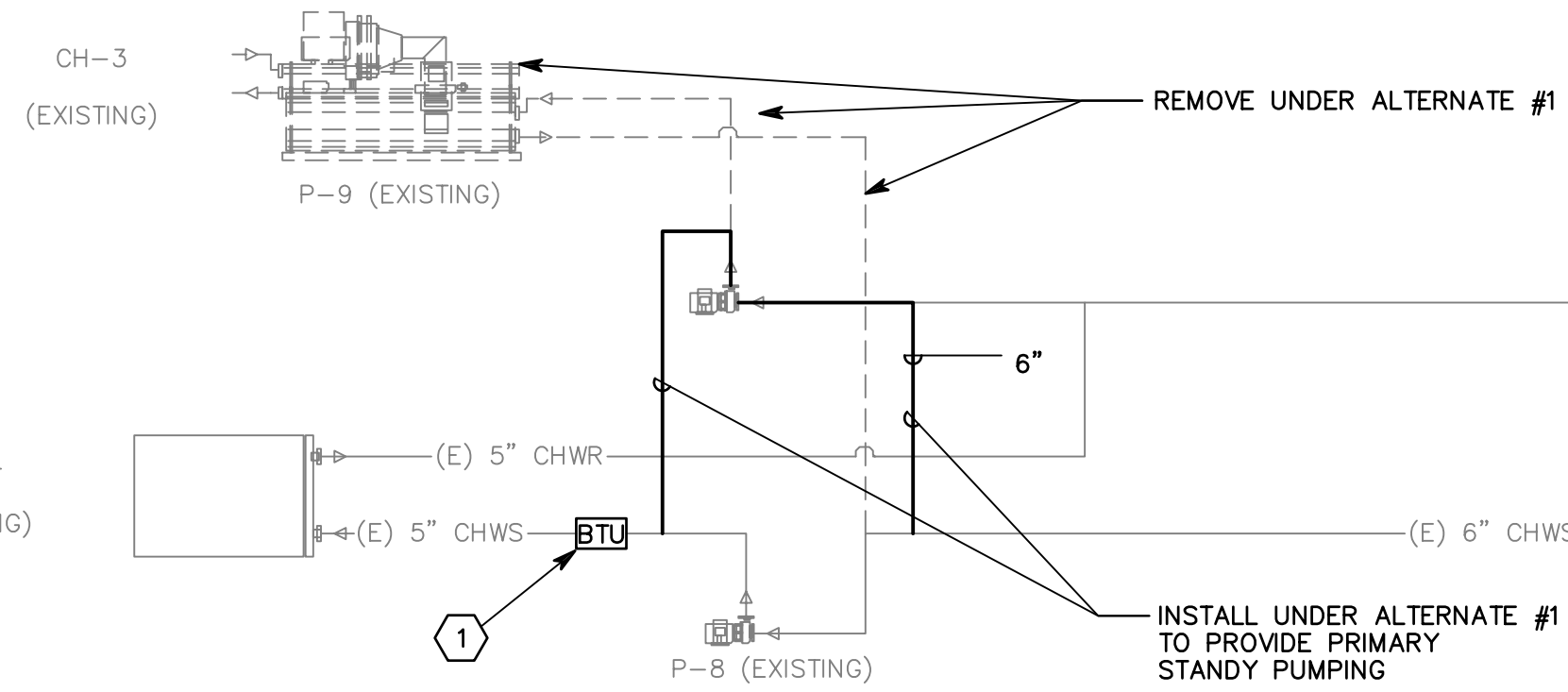
Office

Construction Trades Bldg.

Chiller Plant

New Chiller Plant

Administration building



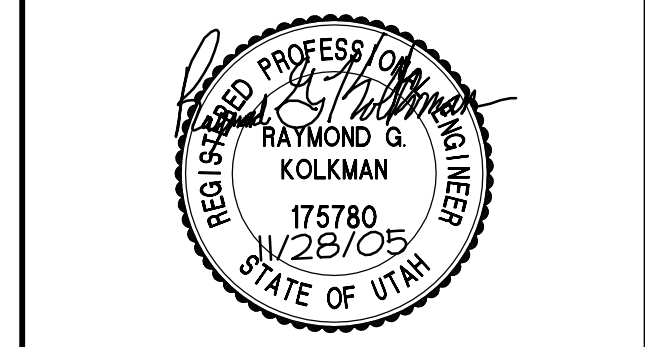


- GENERAL ELECTRICAL NOTES:**
1. LOCATIONS OF EXISTING ELECTRICAL EQUIPMENT, BRANCH CIRCUIT WIRING, ETC., ARE BASED ON EXISTING BUILDING ELECTRICAL DRAWINGS AND FIELD OBSERVATION OF EXISTING SURFACE CONDITIONS. FIELD VERIFY EXISTING LOCATIONS AND CIRCUITING AND IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES WHICH MAY ADVERSELY AFFECT COMPLETION OF THE WORK.
 2. TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO THE EXISTING BUILDING AND TUNNELS. REPAIR ALL DAMAGE INCURRED BY DEMOLITION AND NEW CONSTRUCTION TO EXACTLY MATCH SURROUNDING SURFACES AND/OR CONDITIONS WITHOUT ADDITIONAL COST TO THE OWNER. COORDINATE REPAIRS WITH THE GENERAL CONTRACTOR.
 3. SEAL OPENINGS CREATED IN EXISTING WALLS BY REMOVAL OF EXISTING CONDUIT WITH WATERPROOF, NON-SHRINK GROUT, OR OTHER MEAN SUITABLE FOR WALL TYPE, AS APPROVED THE PROJECT ENGINEER, AND PAINT WALLS TO MATCH EXISTING WALL WHERE REQUIRED. EXTEND PAINTING TO LOGICAL BREAK POINT SUCH AS WALL CORNER AND/OR CEILING.
 4. INCLUDE ALL ELECTRICAL DEMOLITION WORK IN THE BUSINESS BUILDING IN ADDITIVE ALTERNATE NO.1. COORDINATE WITH GENERAL CONTRACTOR.

- REFERENCE NOTES:**
- ① REMOVE EXISTING ELECTRICAL SERVICE TO EXISTING CHILLER TO BE REMOVED INCLUDING ALL ABANDONED WIRING, CONDUIT, BOXES, DISCONNECTS, ETC..
 - ② REMOVE EXISTING ELECTRICAL SERVICE TO EXISTING CHILLER OIL HEATER INCLUDING ALL ABANDONED WIRING, CONDUIT, BOXES, DISCONNECTS, ETC..
 - ③ REMOVE EXISTING ELECTRICAL SERVICE TO EXISTING CONDENSER WATER PUMP TO BE REMOVED INCLUDING ALL ABANDONED WIRING, CONDUIT, BOXES, DISCONNECTS, ETC..
 - ④ REMOVE EXISTING ELECTRICAL SERVICE TO EXISTING COOLING TOWER TO BE REMOVED INCLUDING ALL ABANDONED WIRING, CONDUIT, BOXES, DISCONNECTS, ETC.. EXISTING UNDERGROUND CONDUIT MAY BE ABANDONED IN PLACE WITH ALL WIRING REMOVED. REMOVE ALL ACCESSIBLE CONDUIT IN TUNNEL.
 - ⑤ EXISTING STARTERS AND BREAKERS IN 'MCC' SERVING REMOVED EQUIPMENT ARE TO REMAIN IN PLACE AND BE TURNED OFF. PROVIDE NEW ENGRAVED NAMEPLATE TO INDICATE "SPARE".
 - ⑥ PROVIDE NEW TYPED CIRCUIT INDEX FOR EXISTING PANELBOARDS TO REFLECT ALL CHANGES IN CIRCUITING.
 - ⑦ EXISTING BUSINESS BUILDING CHILLED WATER PUMPS TO REMAIN. SHOWN FOR REFERENCE ONLY.
 - ⑧ EXISTING VARIABLE FREQUENCY DRIVES FOR CHILLED WATER PUMPS TO REMAIN. SHOWN FOR REFERENCE ONLY.


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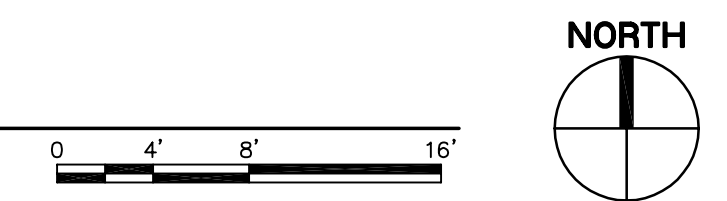
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CHECKED BY: R.G.K.		
DESIGNED BY: W.B.G.		
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**BUSINESS BUILDING
ELECTRICAL DEMOLITION
PLAN - ADD ALT #1**

A1 BUSINESS BUILDING ELECTRICAL DEMOLITION PLAN - ADDITIVE ALTERNATE NO. 1
SCALE: 1/8" = 1'-0"



1 2 3 4 5 6

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A

EXISTING INITIATING DEVICE CIRCUITS (IDC)

CLASS 'A', STYLE 'V'

ZONE NO.	DESCRIPTION
1	CHILLER ROOMS PULL STATIONS
2	CHILLER ROOMS HEAT DETECTORS
3	AIR CONDITIONER DUCT DETECTOR
4	SPARE

EXISTING NOTIFICATION APPLIANCE CIRCUITS (NAC)

CLASS 'A', STYLE 'Z'

ZONE NO.	DESCRIPTION
1	CHILLER ROOMS HORNS & STROBES
2	SPARE

EXISTING FIRE ALARM SYTEM NOTES:

1. THE EXISTING BUILDING IS PROTECTED THROUGHOUT BY AN AUTOMATIC FIRE ALARM SYSTEM WHICH IS TO REMAIN OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD.
2. SUBMIT REQUESTS FOR FIRE ALARM SYSTEM OUTAGES TO THE SLCC FACILITIES PROJECT MANAGER NOT LESS THAN 7 DAY PRIOR TO ANY PROPOSED FIRE ALARM OUTAGES. IMMEDIATELY NOTIFY THE SLCC FACILITIES PROJECT MANAGER IF THE FIRE ALARM IS UNINTENTIONALLY DISABLED AND IMMEDIATELY MAKE REPAIRS TO RESTORE THE SYSTEM TO AN OPERATIONAL CONDITION.
3. THE CONTRACTOR SHALL MAINTAIN A FIRE WATCH DURING ALL FIRE ALARM SYSTEM OUTAGES IN ACCORDANCE WITH IFC SECTION 901.7.
4. ANY WORK PERFORMED ON THE FIRE ALARM SYSTEM SHALL BE APPROVED IN ADVANCE BY THE FIRE ALARM SYSTEM FACTORY REPRESENTATIVE. CONTACT NELSON FIRE SYSTEMS AT (801) 488-8300.
5. CONDUCT A COMPLETE OPERATIONAL TEST OF THE ENTIRE FIRE ALARM SYSTEM (NEW AND EXISTING) PRIOR TO SUBSTANTIAL COMPLETION IN ACCORDANCE WITH SPECIFICATION SECTION 16720.

LIGHTING KEYED NOTES:

- (L1) REMOVE EXISTING NORMAL POWER BRANCH CIRCUIT TO EXISTING FIXTURE AND RECONNECT EXISTING CIRCUIT TO ADJACENT FIXTURES AS REQUIRED. PROVIDE NEW EMERGENCY BRANCH CIRCUIT TO EXISTING FIXTURE AS SHOWN.

GENERAL ELECTRICAL NOTES:

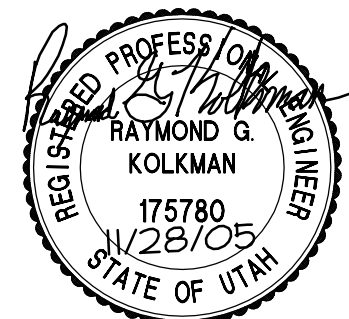
1. LOCATIONS OF EXISTING ELECTRICAL EQUIPMENT, LIGHTING, SWITCHES, OUTLETS, BRANCH CIRCUIT WIRING, ETC., ARE BASED ON EXISTING BUILDING ELECTRICAL DRAWINGS AND FIELD OBSERVATION OF EXISTING SURFACE CONDITIONS. FIELD VERIFY EXISTING LOCATIONS AND CIRCUITING AND IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES WHICH MAY ADVERSELY AFFECT COMPLETION OF THE WORK.
2. COORDINATE NEW FIXTURE LOCATIONS WITH MECHANICAL DUCTWORK, PIPING, ETC.. CHAIN MOUNT FIXTURES BELOW DUCTWORK AND PIPING WHERE NECESSARY.
3. COORDINATE MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL CONTRACTOR AND MECHANICAL PLANS.
4. TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO THE EXISTING BUILDING. REPAIR ALL DAMAGE INCURRED BY DEMOLITION AND NEW CONSTRUCTION TO EXACTLY MATCH SURROUNDING SURFACES AND/OR CONDITIONS WITHOUT ADDITIONAL COST TO THE OWNER. COORDINATE REPAIRS WITH THE GENERAL CONTRACTOR.
5. ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES, ETC., SHOWN ARE TO REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED, REPLACED, OR RELOCATED.



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CHILLER BUILDING
LIGHTING AND
FIRE ALARM PLANS

E-101

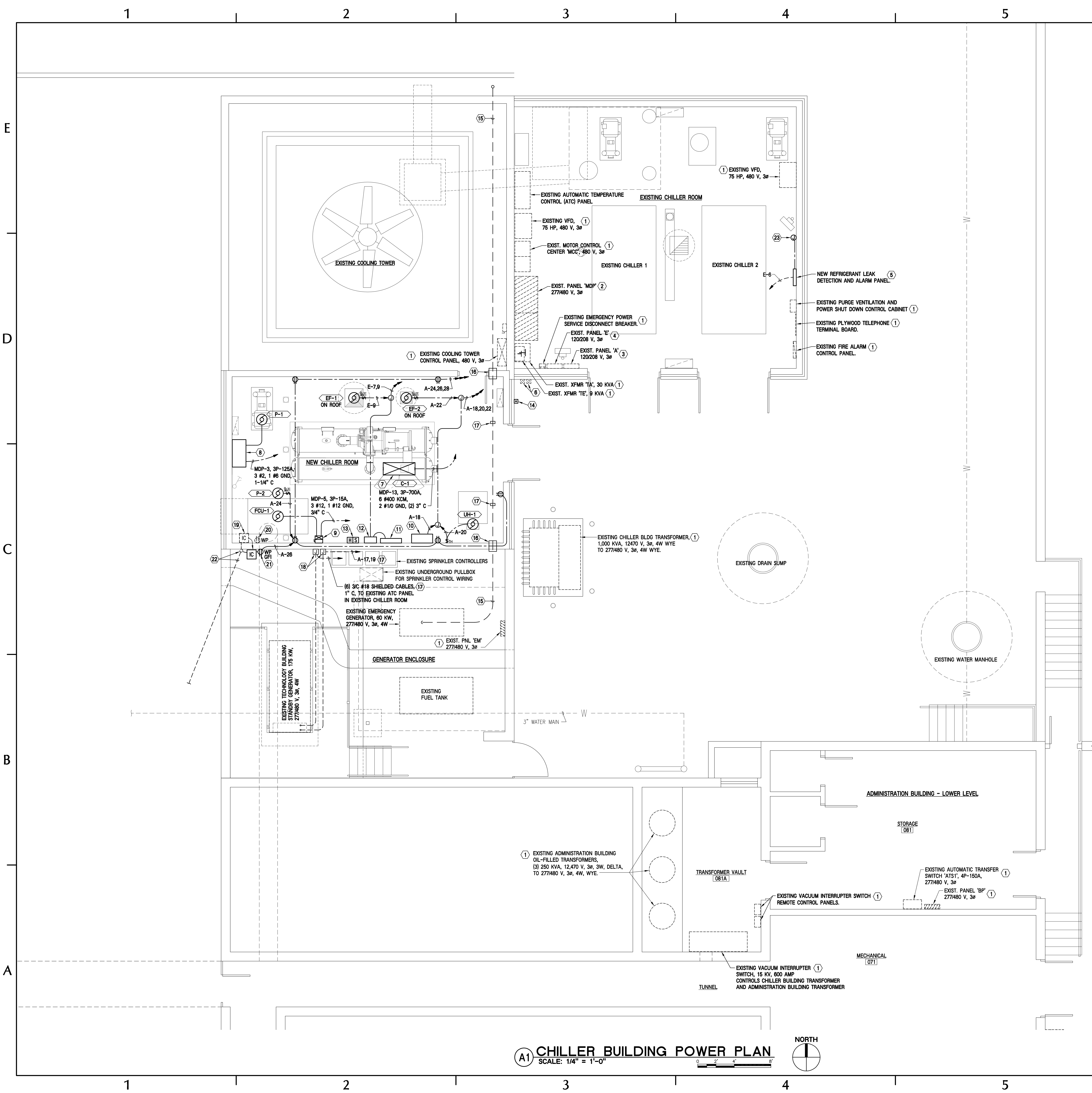
SHEET 2 OF 5 ELECTRICAL

A1 CHILLER BUILDING FIRE ALARM PLAN
SCALE: 1/4" = 1'-0"



A4 CHILLER BUILDING LIGHTING PLAN
SCALE: 1/4" = 1'-0"





GENERAL ELECTRICAL NOTES:

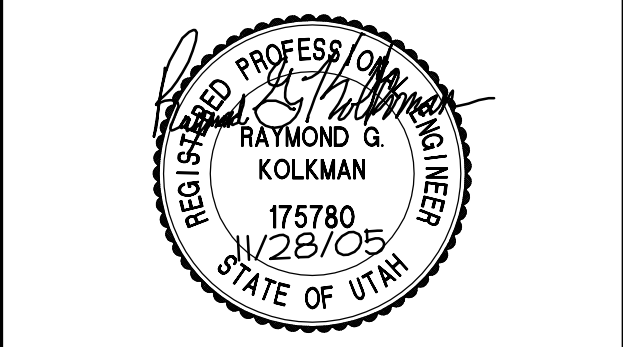
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2. COORDINATE MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL CONTRACTOR AND MECHANICAL PLANS.
3. TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO THE EXISTING BUILDING. REPAIR ALL DAMAGE INCURRED BY DEMOLITION AND NEW CONSTRUCTION TO EXACTLY MATCH SURROUNDING SURFACES AND/OR CONDITIONS WITHOUT ADDITIONAL COST TO THE OWNER. COORDINATE REPAIRS WITH THE GENERAL CONTRACTOR.
4. ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES, ETC., SHOWN ARE TO REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED, REPLACED, OR RELOCATED. TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING ELECTRICAL EQUIPMENT FROM DAMAGE DURING DEMOLITION AND NEW CONSTRUCTION. REPAIR OR REPLACE ANY DAMAGED EQUIPMENT TO MATCH ORIGINAL CONDITION WITHOUT ADDITIONAL COST TO THE OWNER.

REFERENCE NOTES:

1. EXISTING ELECTRICAL EQUIPMENT TO REMAIN. SHOWN FOR REFERENCE ONLY.
2. PROVIDE NEW CIRCUIT BREAKERS IN EXISTING PANEL 'MDP' TO SERVE NEW MECHANICAL EQUIPMENT. SEE CHILLER BUILDING POWER RISER DIAGRAM, SHEET E-601.
3. PROVIDE (2) 1P-15A AND (2) 1P-20A NEW CUTLER HAMMER TYPE 'BAB' BRANCH CIRCUIT BREAKERS IN EXISTING PANEL 'A' TO SERVE NEW 120 VOLT LOADS IN NEW CHILLER ROOM.
4. PROVIDE (2) 1P-20A NEW CUTLER HAMMER TYPE 'BAB' BRANCH CIRCUIT BREAKERS IN EXISTING EMERGENCY PANEL 'E' TO SERVE NEW EMERGENCY CIRCUITS IN NEW CHILLER ROOM.
5. NEW REFRIGERANT LEAK DETECTION AND ALARM PANEL FURNISHED BY DIVISION 15 TO REPLACE EXISTING PANEL. RECONNECT ALL EXISTING POWER AND CONTROL CIRCUITS. COORDINATE REQUIREMENTS WITH CONTROLS CONTRACTOR.
6. EXISTING PURGE VENTILATION AND POWER SHUTDOWN BREAK GLASS PUSHBUTTON STATIONS TO REMAIN.
7. NEW CHILLER STARTER/CONTROL PANEL WITH INTEGRAL DISCONNECT FURNISHED WITH CHILLER, TO BE WIRED BY ELECTRICAL CONTRACTOR.
8. NEW VFD, 60 HP, 480 V, 3 ϕ , TO SERVE NEW CHILLED WATER PUMP P-1. SEE SPECIFICATION SECTION 16485 FOR REQUIREMENTS.
9. NEW COMBINATION STARTER WITH MCP DISCONNECT TO SERVE NEW AIR HANDLING UNIT AH-1. SEE SPECIFICATION SECTION 16480 FOR REQUIREMENTS.
10. CONNECT TO NEW AUTOMATIC TEMPERATURE CONTROL PANEL FURNISHED BY DIV. 15.
11. CONNECT TO NEW REFRIGERANT LEAK DETECTION AND ALARM PANEL FURNISHED BY DIVISION 15.
12. NEW PURGE VENTILATION CONTROL CABINET. SEE PURGE VENTILATION CONTROL WIRING DIAGRAM, SHEET E-601.
13. NEW WARNING HORN AND STROBE FOR NEW CHILLER ROOM REFRIGERANT LEAK DETECTION AND ALARM PANEL. SEE PURGE VENTILATION CONTROL WIRING DIAGRAM, SHEET E-601.
14. NEW PURGE VENTILATION BREAKGLASS PUSHBUTTON STATION. SEE PURGE VENTILATION CONTROL WIRING DIAGRAM, SHEET E-601.
15. EXISTING 3" SCHEDULE 40 BLACK IRON GENERATOR EXHAUST PIPE TO REMAIN. PROVIDE TEMPORARY SUPPORTS AS REQUIRED DURING DEMOLITION OF EXISTING WALLS AND CONSTRUCTION OF NEW WALLS. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR.
16. PROVIDE NEW WALL THIMBLES IN NEW WALLS FOR EXISTING GENERATOR EXHAUST PIPE. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.
17. PROVIDE NEW SUPPORTS FOR EXISTING GENERATOR EXHAUST PIPE FROM NEW ROOF STRUCTURE AT MAXIMUM 10'-0" ON CENTER AND WITHIN 5 FEET OF WALLS.
18. EXISTING NEMA 3R SCREW COVER JUNCTION BOXES FOR TECHNOLOGY BUILDING GENERATOR BLOCK HEATER AND BATTERY CHARGER, AND MONITORING BY JOHNSON CONTROLS AUTOMATION SYSTEM TO REMAIN. PROVIDE TEMPORARY SUPPORTS FOR EXISTING BOXES AND EXISTING CONDUITS TO EXISTING CHILLER ROOM AS REQUIRED DURING DEMOLITION OF EXISTING WALLS AND CONSTRUCTION OF NEW WALLS. RELOCATE AND/OR REPLACE CONDUITS TO BE ROUTED THROUGH NEW CHILLER ROOM AND RECONNECT EXISTING CIRCUITS. COORDINATE CONNECTIONS TO EXISTING ATC PANEL WITH CONTROLS CONTRACTOR. EXISTING CIRCUITS ARE TO REMAIN IN OPERATION EXCEPT AS APPROVED BY THE SLCC FACILITIES PROJECT MANAGER.
19. EXISTING IRRIGATION SPRINKLER PROGRAM CLOCK TO BE RELOCATED AS INDICATED. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR.
20. REMOVE EXISTING RECEPTACLE FOR IRRIGATION SPRINKLER PROGRAM CLOCK AND EXISTING CIRCUIT TO ADMINISTRATION BUILDING THROUGH EXISTING PIPING CULVERT, INCLUDING ALL ABANDONED WIRING, CONDUIT, BOXES, ETC.
21. PROVIDE NEW GFCI RECEPTACLE WITH "RAINTIGHT WHILE IN USE" COVERPLATE SURFACE MOUNTED ON NEW BUILDING EXTERIOR AND NEW HARDWARE CONNECTION TO RELOCATED IRRIGATION SPRINKLER PROGRAM CLOCK.
22. EXISTING UNDERGROUND SPRINKLER CONTROL CONDUIT STUB UP TO REMAIN. REMOVE EXISTING CONDUIT THROUGH EXISTING WALL. PROVIDE NEW CONDUIT CONNECTION TO RELOCATED IRRIGATION SPRINKLER PROGRAM CLOCK AND RECONNECT EXISTING CONTROL CONDUCTORS. FIELD VERIFY REQUIREMENTS WITH GENERAL CONTRACTOR AND SLCC FACILITIES PROJECT MANAGER.
23. NEW 120 VAC OPERATOR FOR EXISTING OUTSIDE AIR INTAKE DAMPER BY CONTROLS CONTRACTOR TO REPLACE EXISTING 24 VOLT OPERATOR. CONNECT NEW OPERATOR TO CIRCUIT E-4 THROUGH EXISTING CONDUCTOR 'PP-1' AS SHOWN ON EXISTING PURGE VENTILATION AND POWER SHUTDOWN CONTROL WIRING DIAGRAM, SHEET E-602.

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**CHILLER BUILDING
POWER PLAN**

E-102
SHEET 3 OF 5 ELECTRICAL

+ FURNISH AND INSTALL NEW CUTLER HAMMER TYPE 'BAB' BRANCH CIRCUIT BREAKER

+ FURNISH AND INSTALL NEW CUTLER HAMMER TYPE 'BAB' BRANCH CIRCUIT BREAKER

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NOTES

1. EXISTING ELECTRICAL SERVICE MAXIMUM DEMAND FROM PANEL 'MDP' POWER METER.
2. NEW ELECTRICAL LOAD CONNECTED TO SEPARATE EMERGENCY POWER SERVICE, DEMAND LOAD IS NOT INCLUDED.
3. NEW MOTOR IS SMALLER THAN EXISTING LARGEST MOTOR.
4. ATC PROGRAMMING WILL NOT ALLOW NEW PUMP TO OPERATE SIMULTANEOUSLY WITH TWO EXISTING 75 HP CHILLED WATER PUMPS
5. ATC PROGRAMMING WILL NOT ALLOW NEW CHILLER TO OPERATE SIMULTANEOUSLY WITH TWO EXISTING 580 TON CHILLERS.

FIXTURE SCHEDULE

E - ELECTRICAL CONTRACTOR
M - MECHANICAL CONTRACTOR
S - SUPPLIED WITH EQUIPMENT

EQUIPMENT SCHEDULE

E - ELECTRICAL CONTRACTOR
M - MECHANICAL CONTRACTOR
S - SUPPLIED WITH EQUIPMENT

SYMBOL LIST

⑥



- ① NEW CUTLER HAMMER 3P-700A TYPE 'MDL' BREAKER WITH DIGITRIP RMS310-LS ELECTRONIC TRIP AND MOUNTING HARDWARE TO SERVE NEW CHILLER 'C'-1.
- ② NEW CUTLER HAMMER 3P-150A TYPE 'FD' BREAKER TO SERVE NEW FAN COIL UNIT 'FCU'-1.
- ③ NEW CUTLER HAMMER 3P-125A TYPE 'JD' BREAKER WITH ADJUSTABLE MAGNETIC

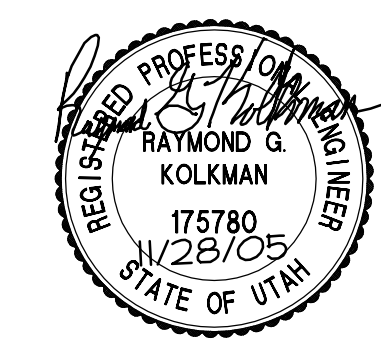


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CHECKED BY:	PCK
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CHECKED BY:	R.G.R.
DESIGNED BY:	W.B.C.

DESIGNED BY:	W.B.G.
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SYMBOL LIST, SCHEDULES AND DIAGRAMS

E-601

E

D

C

B

A

EXISTING CONTROL DIAGRAM EQUIPMENT LIST

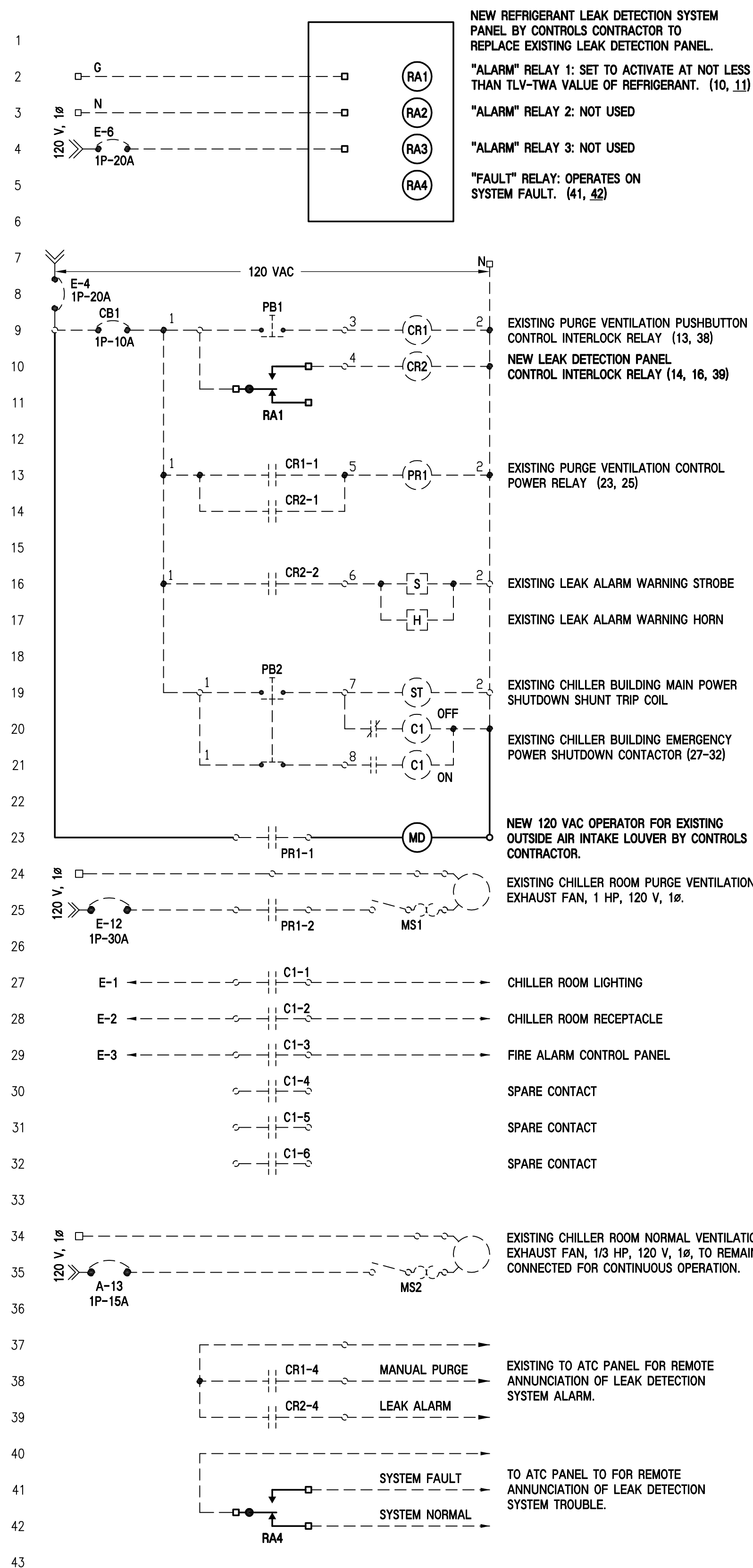
- CB1 EXISTING CONTROL CIRCUIT BREAKER.
- PB1 EXISTING PURGE VENTILATION BREAK GLASS PUSHBUTTON STATION.
- PB2 EXISTING EMERGENCY POWER SHUTDOWN BREAK GLASS PUSHBUTTON STATION.
- CR1 EXISTING PURGE VENTILATION CONTROL INTERLOCK RELAYS.
- CR2
- PR1 EXISTING PURGE VENTILATION EXHAUST FAN POWER CONTACTOR.
- ST EXISTING SHUNT TRIP SOLENOID FOR CHILLER BUILDING ELECTRICAL SERVICE MAIN BREAKER POWER SHUTDOWN.
- C1 EXISTING MECHANICAL HELD CONTACTOR FOR EMERGENCY PANEL 'E' CIRCUITS POWER SHUTDOWN.
- S EXISTING LEAK DETECTION WARNING STROBE.
- H EXISTING LEAK DETECTION WARNING HORN.
- RA0 NEW FORM 'C' (SPDT) DRY CONTACTS IN NEW REFRIGERANT LEAK DETECTION SYSTEM PANEL BY CONTROLS CONTRACTOR.
- MD NEW 120 VAC MOTORIZED DAMPER OPERATOR BY CONTROLS CONTRACTOR FOR EXISTING OUTSIDE AIR INTAKE LOUVER.
- MS1 EXISTING MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION.
- MS2

EXISTING CONTROL DIAGRAM NOTES:

1. NEW REFRIGERANT LEAK DETECTION SYSTEM PANEL WILL BE FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR TO REPLACE EXISTING REFRIGERANT LEAK DETECTIONS SYSTEM PANEL. RECONNECT ALL EXISTING WIRING FROM EXISTING PANEL TO NEW PANEL. MODIFICATION OF EXISTING CONDUIT ENTRIES INTO THE NEW PANEL WILL BE REQUIRED.
2. NEW 120 VAC OPERATOR FOR EXISTING OUTSIDE AIR INTAKE LOUVER WILL BE FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR TO REPLACE EXISTING 24 VOLT OPERATOR. PROVIDE NEW 120 VOLT CIRCUIT FROM EXISTING EMERGENCY PANEL 'E' TO NEW OPERATOR AS SHOWN.
3. EXISTING CONTROL DEVICES AND WIRING ARE TO REMAIN EXCEPT AS NOTED.
4. PROVIDE 'AS-BUILT' COPY OF WIRING DIAGRAM ON INSIDE FRONT COVER OF EXISTING CONTROL CABINET.
5. COORDINATE PURGE VENTILATION AND POWER SHUTDOWN CONTROL REQUIREMENTS WITH CONTROLS CONTRACTOR AND GENERAL CONTRACTOR PRIOR TO BEGINNING WORK.
6. CONDUCT COMPLETE OPERATIONAL TEST OF PURGE VENTILATION AND POWER SHUTDOWN SYSTEM IN THE PRESENCE OF THE PROJECT ENGINEER AND OWNER PRIOR TO SUBSTANTIAL COMPLETION.

EXISTING CHILLER ROOM PURGE VENTILATION AND POWER SHUTDOWN CONTROL WIRING DIAGRAM

(A1) SCHEMATIC



NEW REFRIGERANT LEAK DETECTION SYSTEM PANEL BY CONTROLS CONTRACTOR TO REPLACE EXISTING LEAK DETECTION PANEL.

"ALARM" RELAY 1: SET TO ACTIVATE AT NOT LESS THAN TLV-TWA VALUE OF REFRIGERANT. (10, 11)

"ALARM" RELAY 2: NOT USED

"ALARM" RELAY 3: NOT USED

"FAULT" RELAY: OPERATES ON SYSTEM FAULT. (41, 42)

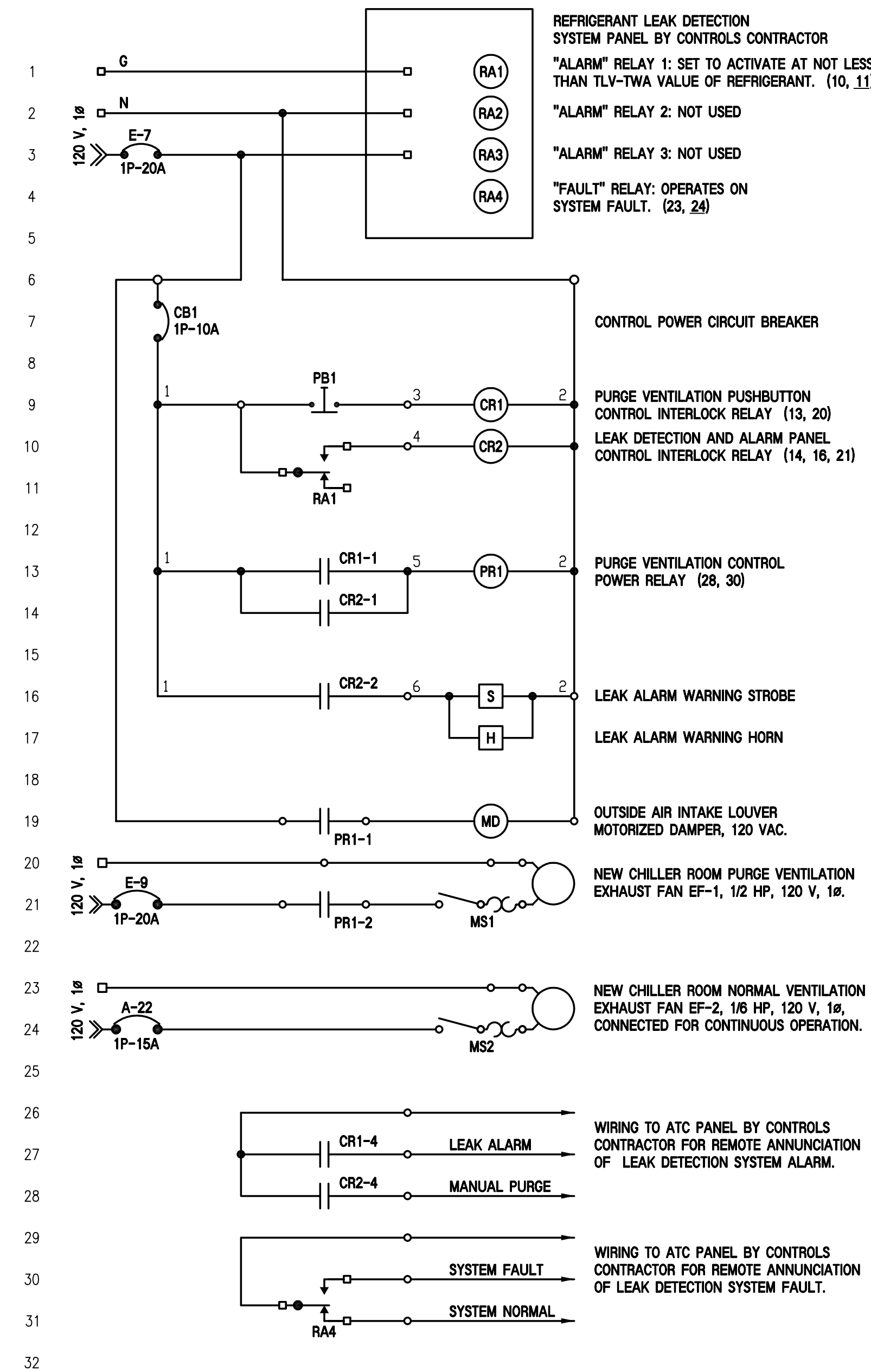
NEW CONTROL DIAGRAM EQUIPMENT LIST

- CB1 CUTLER HAMMER TYPE WMS1C10 MINATURE CONTROL CIRCUIT BREAKER, DIN RAIL MOUNTED, RATED 120 VAC MINIMUM, 10 AMP, INSTALL ON TERMINAL BLOCK MOUNTING RAIL IN CONTROL CABINET.
- PB1 CUTLER HAMMER TYPE 10250T8G/10250T1E/10250TSP77R/10250TN11 BREAK GLASS PUSHBUTTON STATION, MOMENTARY CONTACT, WITH 1 N.O. & 1 N.C. A800 CONTACTS, 5 SPARE DISCS, HAMMER AND CHAIN, AND BLANK RED LEGEND PLATE, IN CAST METAL NEMA 4X ENCLOSURE. PUSHBUTTON TO BE HELD IN DEPRESSED POSITION BY GLASS DISC (POSITION SHOWN ON CONTROL DIAGRAM).
- CR1 CUTLER HAMMER TYPE A840A INDUSTRIAL CONTROL RELAY WITH 4 N.O. A800 CR2 CONVERTIBLE CONTACTS AND 120 VAC COIL. INSTALL IN CONTROL CABINET.
- PR1 CUTLER HAMMER TYPE C25BNE230A POWER CONTACTOR WITH 2 N.O. CONTACTS RATED 30 AMPS AT 600 VAC, AND 120 VAC COIL. INSTALL IN CONTROL CABINET.
- S EDWARDS CAT. NO. 89SMSTRA-N6 SURFACE MOUNT WARNING STROBE WITH AMBER LENS TO PRODUCE MINIMUM 90 EFFECTIVE CANDLEPOWER AT 120 VAC, TO MATCH STROBE IN EXISTING CHILLER ROOM.
- H EDWARDS CAT. NO. 874-N6 SURFACE MOUNTED WARNING HORN TO PRODUCE MINIMUM 103 DB AT 10 FT., AT 120 VAC, TO MATCH HORN IN EXISTING CHILLER ROOM.
- RA1 FORM 'C' (SPDT) DRY CONTACTS IN NEW CHILLER ROOM REFRIGERANT LEAK RA2 DETECTION AND ALARM PANEL.
- ATC-X AUTOMATIC TEMPERATURE CONTROL SYSTEM RELAY BY TEMPERATURE CONTROL CONTRACTOR.
- MD MOTORIZED DAMPER FOR MAKE-UP AIR LOUVER IN NEW CHILLER ROOM.
- MS1 MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION, SEE MS2 SPECIFICATION SECTION 16480.
- CONTROL SURFACE MOUNTED, MINIMUM 18" W X 20" H X 6" D, NEMA 1 ENCLOSURE WITH HINGED FRONT COVER, FLUSH LATCH AND EQUIPMENT MOUNTING PANEL. B-LINE CAT. NO. 20166-1 ENCLOSURE WITH CAT. NO. AW2016-1P PANEL, OR EQUAL.
- ENTRELEC 'BAM' SERIES, OR EQUAL, TERMINAL BLOCKS, RATED 600 VOLT, FOR #24-#8 CONDUCTORS IN CONTROL CABINET AS REQUIRED FOR TERMINATION OF ALL POWER AND CONTROL CONDUCTORS. PROVIDE COMPLETE WITH DIN MOUNTING RAILS, END BARRIERS, ETC., AS REQUIRED.

NEW CONTROL DIAGRAM NOTES:

1. USE MINIMUM #14 STRANDED WIRE FOR ALL CONTROL CONDUCTORS. LABEL WIRE ACCORDING TO NUMBER ON CONTROL DIAGRAM. SEE SPECIFICATION SECTION 16195.
2. REFER TO ELECTRICAL PLANS FOR POWER WIRE SIZES.
3. PROVIDE ENGRAVED NAMEPLATE FOR "PURGE VENTILATION CONTROL CABINET" IN ACCORDANCE WITH SPECIFICATION SECTION 16195. PROVIDE SELF-ADHESIVE LABEL TO INCLUDE CIRCUIT NUMBERS OF ALL CONTROL AND POWER CIRCUITS.
4. PROVIDE SELF-ADHESIVE LABELS TO IDENTIFY ALL CONTROL DEVICES ACCORDING TO WIRING DIAGRAM.
5. PROVIDE 'AS-BUILT' COPY OF WIRING DIAGRAM ON INSIDE FRONT COVER OF CONTROL CABINET.
6. COORDINATE PURGE VENTILATION EXHAUST FAN CONTROL REQUIREMENTS WITH CONTROLS CONTRACTOR AND GENERAL CONTRACTOR PRIOR TO BEGINNING WORK.
7. CONDUCT COMPLETE OPERATIONAL TEST OF PURGE VENTILATION SYSTEM IN THE PRESENCE OF THE PROJECT ENGINEER AND OWNER PRIOR TO SUBSTANTIAL COMPLETION.

(A4) SCHEMATIC

NEW CHILLER ROOM PURGE VENTILATION CONTROL WIRING DIAGRAM

MINIMUM 1/4" HIGH LETTERING

ENGRAVED NAMEPLATE, RED WITH WHITE LETTERING SECURE TO WALL WITH STAINLESS STEEL FASTENERS.

REFRIGERATION ROOM PURGE VENTILATION EXHAUST SYSTEM BREAK GLASS TO OPERATE

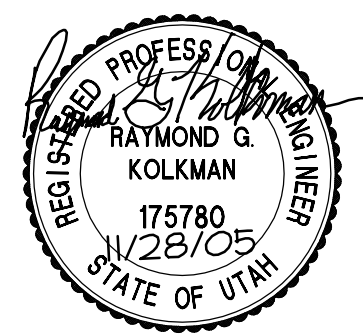
INSTALL ABOVE NEW PUSHBUTTON 'PB1' TO MATCH INSTALLATION OF EXISTING PUSHBUTTON STATIONS

(D6) PUSHBUTTON NAMEPLATE DETAIL
FULL SIZE

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SLCC REDWOOD ROAD CAMPUS
STATE PROPERTY NO:

SLCC BUSINESS BUILDING CHILLER REPLACEMENT

SALT LAKE CITY, UTAH

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MARK	DATE	DESCRIPTION
ISSUE: CONSTRUCTION DOCUMENTS	DATE: NOVEMBER 28, 2005	
DCFM PROJECT NO:	05238660	
PROJECT NO:	20050650	
DRAWN BY:	W.B.G.	
CHECKED BY:	R.G.K.	
DESIGNED BY:	W.B.G.	
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SHEET TITLE		
CONTROL WIRING DIAGRAMS		

E-602

SHEET 5 OF 5 ELECTRICAL